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Top management teams of internationalizing firms

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Publication date:
2004

Document Version
Publisher's PDF, also known as Version of record

Link to publication in Tilburg University Research Portal

Citation for published version (APA):
Chvyrkov, O. (2004). *Top management teams of internationalizing firms: Demography, social processes and learning at the top*. [Doctoral Thesis, Tilburg University]. CentER, Center for Economic Research.

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OLEG CHVYRKOV

Top Management Teams of Internationalizing Firms: Demography, Social Processes, and Learning at the Top

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Top Management Teams of Internationalizing Firms: Demography, Social Processes, and Learning at the Top

Top Management Teams of Internationalizing Firms: Demography, Social Processes, and Learning at the Top

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit van Tilburg,
op gezag van de rector magnificus,
prof.dr. F.A. van der Duyn Schouten,
in het openbaar te verdedigen ten overstaan van
een door het college voor promoties aangewezen commissie
in de aula van de Universiteit

op vrijdag 25 juni 2004 om 10:15 uur door

Oleg Chvyrkov

geboren op 12 december 1976 te Moskou, Rusland

Promotor: prof. dr. H.G. Barkema

Моим родителям

Preface

Four years ago, in Uppsala, Udo Zander addressed a group of doctoral candidates with what sounded like an unusual message. He argued that working on one's dissertation is, above all, about discovering one's true intellectual inclinations. I was surprised to hear this. My tutors in Tilburg tended to shy the introspective and philosophical aspects of research – apparently, trying to protect young researchers from developing vague goals and attitudes, common with less productive schools. Discussions went mostly around top journals, top schools, and joining the ranks of the international academic community. Much as I benefited from such training – and perhaps exactly by its virtue – I am now much better able to appreciate Udo's message. In fact, I think the notion is particularly true for a field that leaves wide scope for one's mind to roam, such as Strategy or International Business. Indeed, with the benefit of hindsight, I can trace a four-year drift starting on the finance side of strategy ("macro"), somewhere in the direction of organizational psychology ("micro") – and at the same time, somewhat paradoxically, a growing interest in quantitative methods.

Along the way, I have benefited enormously from the guidance of Harry Barkema. Harry's apprenticeship method, a blend of European and North American traditions, is probably the most effective way to transfer all kinds of research skills – while even the more general bits of wisdom might occasionally spill over. In Tilburg, I also had a chance to learn from, among others, Jean-Francois Hennart, Xavier Martin, and Niels Noorderaven, both in class and informally; I am delighted that they agreed to serve on my thesis committee. In fact, Margarethe Wiersema, professor at University of California at Irvine, and, luckily, a committee member as well, has influenced my research in more subtle ways – her 1992 work was among the first papers I read on top management teams, and clearly one of the key studies that motivated my focus on this topic.

Now that I think of it, Sjoerd Beugelsdijk, Arjen Slangen, and Rian Drogendijk, my fellow Ph.D. students, on many occasions also acted as my true Dutch hosts, helping my understanding of the Netherlands to a great extent. Like all diverse groups, my Ph.D. class was not quick to integrate, but ultimately developed some deep and complex way of understanding

each other (more on that in Chapter 4). Martyna Janowicz, Anna Nadolska and Filippo Wezel are thoughtful, cheerful friends who continuously stimulate my interest in things like travelling, art and food. I hope I will have a chance to work with Dorota Piaskowska again – or serve as her pilot, like in Denver; I also look forward to having one of those lavish Polish dinners together. Alex Eapen, Rejie George, and Rekha Krishnan are devoted researchers and great presenters; they are also great company when taking a (rare) break.

I would like to thank Mario Schijven for composing the Dutch summary of the thesis. I am grateful to Arthur Van Soest and Alexei Goriaev for providing expert advice on econometric issues, all remaining flaws are mine. Finally, I am very indebted to my family and friends in Moscow who had done their best to make my foreign stay comfortable and remain a source of inspiration.

Oleg Chvyrkov
Moscow, April 2004

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Chapter 1

Introduction

The most important trends for firms during the last decade, in terms of what drives their competitive advantage, are globalization and technological innovation (Hitt, Keats, and DeMarie, 1998). It is important, both from a theoretical and a practical perspective, to understand what sort of leadership is needed to anticipate and manage these challenges. Indeed, a variety of studies have explored what top management team (TMT) characteristics drive technological innovation (Wiersema and Bantel, 1992). However, only a few studies have explored how TMT characteristics influence international innovation (e.g. Carpenter and Frederickson, 2001; Sambharya, 1996). These studies are very partial and provide mixed results. An overview of research on TMT composition is presented in the Chapter 2, setting the stage for subsequent theory development. This chapter also presents reviews of literatures that contributed to the theoretical models as well; this includes the research on managerial and organizational cognition, self-categorization and conflict in small groups, and socialization.

Research presented in this thesis was motivated, in the first place, by the desire to explore the precursors and consequences of TMT composition in the context of international expansion. Hence, the first empirical study, presented in Chapter 3, addresses the relationship between (the extent of) internationalization of a firm and demographic traits of the TMT. This study develops theory and hypotheses on how an increase in the scope of international operations of a firm (and associated complexity of organizational structures and environment) may impose additional cognitive requirements on executives, necessitating larger, more diverse and more experienced TMTs.

I also felt inspired by recent developments in research on organizational groups – for instance, the shift of focus towards things social (cf. Pelled, Eisenhardt, and Xin, 1999), as compared to predominantly cognitive approach adopted in earlier studies (cf. Hambrick and Mason, 1984). The idea that demographic diversity may take different forms, sometimes leading to emergence of subgroups on the team that distort the normal social processes ('faultline settings', cf. Lau and Murnighan, 1998) is explored in the second study (Chapter 4). This study also develops hypotheses on how the socialization of team members (over joint tenure) may change the way in which the (demographic) diversity affects decision making, but also reduce the adverse effects of faultlines. These effects were tested empirically in the context of direct investment decisions at internationalizing Dutch firms, leading to strong support of the hypothesized relationships.

Although organizational learning theory is, to some extent, present in all theoretical models presented in this thesis, the third study (Chapter 5) explicitly addresses learning from experience in the context of entering new national markets. A key notion of this study is that (sequences of) joint experiences lead to (joint) patterns of sense making and meaning, which in turn influence later strategic decisions – in terms of the degree of innovation and success of future expansions. Indeed, recent research on TMTs has explored how individual experiences, and joint experience of teams in a particular context may influence subsequent strategic choices (Bigley and Wiersema, 2002; Westphal and Fredrickson, 1999). This study develops the idea that non-routine strategic events (in the context of the study: entering foreign markets) enable learning by groups and organizations, serving as a source of semi-structure (cf. Okhyusen and Eisenhardt, 2002) -- unless these events overwhelm the organization, or social processes on the TMT are severely distorted (faultline settings). Empirical results provide partial support of the theory.

Results of these studies are summarized in Chapter 6, which also presents a discussion of limitations of the research presented this thesis, and suggestions for future research.

Chapter 2

Theoretical Background

2.1 Introduction

This chapter presents a brief overview of several streams of research that had shaped the logic of theoretical models developed in chapters 3-5. Links to the "upper echelons" literature, for instance, are quite explicit; at the same time, the influence of other research traditions – particularly, the research on managerial and organizational cognition – is more subtle. The structure of this chapter reflects the way in which the thinking on top management teams has been evolving over several decades. Indeed, the cognitive approach has furnished the theoretical foundations for the "upper echelons" tradition (cf. Hambrick and Mason, 1984); about a decade later, concern with contradictory findings in studies of executive demography (cf. Lawrence, 1997) led TMT researchers to consider mechanisms offered by self-categorization theory and research on conflict (e.g. Pelled, Eisenhard, and Xin, 1999). Recently, the effect of time on functioning of teams came into focus of TMT research (as well as broader area of research on organizational groups). The latter steam builds on the literature on organizational socialization, reviewed in the concluding section of this chapter.

2.2 Managerial and Organizational Cognition

An important challenge faced by most managers is to make sense of rich, complex, ambiguous and munificent information worlds (Kiesler and Sproull, 1982; Mintzberg, Raisighani, and Theoret, 1976). Like other individuals, managers meet this information challenge by employing "top-down" or "theory-driven" information processing to represent their information worlds and thus facilitate information processing and decision making. In "top-down" approach, past experiences in similar circumstances serve to guide current patterns of registering, encoding and making inferences about new information n (Fiske and Taylor, 1991; Walsh, 1995). This process is facilitated by mental models or schemas – cognitive structures that represent knowledge about a concept or type of stimulus, including its attributes and the relations among the attributes (Fiol and Huff, 1992; Fiske and Taylor, 1991: 98; Weick, 1995). Mental models allow individuals to understand phenomena, make inferences and experience events by proxy. Given human limitations as information-processors, top-down heuristics may the dominant response in all but most novel situations (Walsh, 1995).

Mental models influence each component of the sensemaking process. They influence what is noticed by making some stimuli more salient than others, provide rules and relationships that influence the interpretation of what is noticed, and they suggest what actions should be taken (Bogner and Barr, 2000: 213). Indeed, it is relatively easy for an individual to move an object along a cognitive construct, but much more difficult to think of objects in terms that are not part of an existing system. Constructs are thus seen to form a somewhat flexible yet structure network that both facilitates and restricts an individual's perceptions and actions (Kelly, 1955: 49; Reger and Huff, 1993). Innovations, for instance, are likely to present significant cognitive problems when they involve new core concepts or new relations among new concepts (Greve and Taylor, 2000: 55).

In the service of cognitive economy, mental models speed problem-solving by furnishing a basis for evaluating the information, often in ambiguous circumstances (Fiske and Taylor, 1991; Kiesler and Sproull, 1982; Walsh, 1995). The inevitable by-product of cognitive representations is that managers sometimes act on "impoverished views of the world" (Weick, 1979). Indeed, the use of mental models may encourage stereotypic thinking; subvert controlled information processing; fill data gaps with typical but perhaps inaccurate information; discourage disconfirmation of the existing mental models; inhibit creative problem solving (Dutton and Jackson, 1987; Walsh, 1995: 282). Walsh (1995) observes that "schematic information processing can be at once enabling and crippling".

Cognitions do not change spontaneously. They change because of information received through the actions of others and through actions taken by the focal organization, but they rarely undergo complete transformations (Gersick and Hackman, 1990; Greve and Taylor, 2000: 55). Schemas are developed over time through experience, vicarious learning and direct communication with others and are slow to adjust (Fiske and Taylor, 1991; Gioia and Chittipeddi, 1991; Walsh, 1995). Although in general schemas become more accurate as they evolve, well-developed schemas often resist change even in the face of disconfirming evidence (Fiske and Taylor, 1991: 150), sometimes becoming a source of organizational inertia (Tripsas and Gavetti, 2000; Barr, Stimpert and Huff, 1992).

Recent empirical research showed that persistence of mental models that are no longer appropriate may result in organizational decline. Tripsas and Gavetti (2000) analysed the failure of Polaroid to enter the digital camera market despite early investment and leading-edge technical

capabilities. These authors presented evidence that executives of the firm were trapped in cognitions inherited from firm's experience in instant photography. In the study of a strategic change in a university setting, Gioia and Chittipeddi (1991) showed that in overcoming inertia at different levels in the organization, CEO may play an important role in developing and communicating an altered vision of the organization. Jackson and Dutton (1988) and Thomas, Clark, and Gioia (1993) found that assigning of environmental stimuli to a certain category within a mental map ("early labeling", cf. Fiske and Taylor, 1995) to a large extent influences subsequent organizational action. Barr *et al.* (1992) studied the evolution of mental models of top managers of two railway companies in the period of 25 years. Executives of the firm that eventually went out of business experienced a rapid, drastic change in cognition in the time of environmental change, but did not perform further adjustments to their mental models. Managers of the survivor firm, on the contrary, took 6 years to unlearn the earlier schemas, and subsequently continued experimentation, change and learning in the mental models for the remaining 19 years under observation. This observation is indeed in line with the argument that in times of high environmental uncertainty organizations must become "active sensemakers" by undertaking experimental actions, "low-cost probes" to learn about their environment (Bogner and Barr, 2000; Brown and Eisenhardt, 1997; Weick, 1995).

Weick (1979) proposed that not only the accuracy, but also complexity of managerial schemata should be considered. Complexity refers to the number of constructs that form part of a mental model and linkages between constructs (Fiske and Taylor, 1991). Administrators that are more developmentally complex are more able to apply a diversity of descriptions to particular events; this ability should be demonstrated in such areas as explaining particular environmental events, evaluating successor failure of a particular instance, or determining employee success or failure. One of the associated abilities is empathy and making use of dissent (Bartunek, Gordon, and Weathersby, 1983: 281). Several writers in strategic management emphasized that cognitive complexity of top management teams should match the complexity of organizational structures and environment, particularly in the case of internationalised firms (Bartlett and Ghoshal, 1989). Indeed, complexity is associated with exposure to diverse, conflicting experiences (Bartunek et al, 1983). Calori, Johnson, and Sarnin (1994) showed that cognitive schemas of CEOs depend on whether the firm is independent or affiliated with a foreign parent. Managers of foreign-owned firms showed more complex understanding of industry dynamics – in line with the argument that

interactions with managers from foreign headquarters are a source of confrontation of schemas of dynamics of the environment. The quantity of knowledge may not increase, but the reasoning is enriched with new concepts and links (Calori et al, 1994: 454).

Recent research shows increasing interest in cognition at the group level of analysis (cf. Reger and Huff, 1993; Klimoski and Mohammed, 1994; Walsh, 1995). Indeed, cognition is almost always a social phenomenon. "Reality" is jointly constructed by individuals acting in a social context (Klimoski and Mohammed, 1994: 406). Individual mental models are influenced by the interactions individuals have with others; these interactions give rise to commonly shared ideas, or beliefs (cf. "dominant logic", Prahalad and Bettis, 1986). As interactions occur between individuals within a group, the commonly shared ideas begin to take an existence of their own, independent of the individuals that created them. These "shared belief systems" make coordinated activity possible by providing a common framework for noticing and interpreting new stimuli and for coordinating appropriate action (Bogner and Barr: 213). Partial overlap of schemas provides a simultaneous basis for simultaneous unity and diversity in group processes (Fiol and Huff, 1992). Indeed, the notion that groups of people can retain information through sharing in a way that transcends the cognitive facilities of individuals is prevalent in psychology and sociology (Klimoski and Mohammed, 1994). Indeed, organizations with access to more varied images will engage in sensemaking that is more adaptive than will organizations with limited vocabularies (Weick, 1995: 4). Several authors argued that decision-making teams composed of individuals with diverse cognitive perspectives, or frameworks, will result in a greater degree of "cognitive complexity" than will a team made up of a more cognitively homogeneous members. Organizations with a more cognitively diverse decision-making team can broaden the set of individual cognitive frameworks through which the environment is viewed, thereby increasing the number of environmental concepts, trends and industry characteristics noticed by the strategic decision makers (Bogner and Barr, 2000: 217). Thus, Brown and Eisenhardt (1998) found that successful firms engaged heavily in cross-functional and cross-team communication that increased the number of viewpoints entering decisions.

2.3 Executive Demography

The Upper Echelons theory views firm's responses to environmental stimuli as product of managerial perceptions and evaluation of the challenges they pose (Finkelstein and Hambrick,

1996). It has become common in empirical studies of top management teams to use demographic proxies of managerial cognition. This approach follows the original suggestions made by Hambrick and Mason (1984).

Tenure of top managers is one of the most extensively studied constructs. High levels of tenure are typically believed to indicate cohesion and rigidity, leading to strategic persistence (Finkelstein and Hambrick, 1996). Finkelstein and Hambrick (1990), Hambrick, Geletkanycz and Fredrickson (1993), and Wiersema and Bantel (1992) observed positive linear association between mean firm tenure of TMT and strategic persistence; at the same time, Bantel and Jackson (1989) found negative relationship between firm tenure and technological innovation in banking industry, and insignificant effects of tenure for administrative innovation. Keck (1997) found that firms led by short-tenured teams perform better in turbulent contexts; similarly, Thomas, Litschert, and Ramaswami (1991) showed that innovative Prospector firm perform best when led by CEOs with short tenure. Hambrick, Cho, and Chen (1996) found negative relationship between mean organizational tenure and propensity for strategic action in the sample of US airlines. Boeker (1997a) studied how the executive migration influences strategic change, particularly, entry into new product markets on a sample of 67 US semiconductor producers. The study found that teams with short average (team) tenure are more likely to back the initiative of new market entry put forward by a new member, than veteran teams. Addition of new members was also positively related to entry into new (product) markets. In a recent theoretical contribution, Morrison and Milliken (2000) developed the earlier argument of Hambrick and Mason (1984) and Katz (1982) that tenured cohesive teams are more likely to develop the mind-guarding atmosphere of "organizational silence" that discourages middle management from delivering the unpleasant information. Similarly, Huy (1999) argued that receptivity to change is hard to achieve with veteran teams that may view strategic change as a threat to organizational identity.

However, implications of tenure for decision-making in case of the top management teams remain ambiguous. Wiersema and Bantel (1992), for instance, found positive relationship between mean team tenure and strategic change. In the study of Eisenhardt and Schoonhoven (1990), common work experience and industry tenure positively influenced growth of young firms. Sutcliffe (1994) argued that it is often hard to disentangle the effects of intragroup social processes from the influence of external ties of executives developing -- with experience and

becoming important sources of information (cf. Geletkanycz and Hambrick, 1997). More precise measures may be needed to investigate the mechanisms at work (Lawrence, 1997).

Research on executive demography has also studied the relationship between the amount of formal education of top managers and various organizational outcomes. Amount of formal education is associated with cognitive complexity, i.e. the ability to discern patterns and distinguish among objects (Finkelstein and Hambrick, 1996; Bartunek *et al.*, 1983; Weick, 1979). The latter proposition received empirical support in the work of Wally and Baum (1994); the authors also reported significant association between amount of education and speed of decision-making. Bantel and Jackson (1989) observed strong relationship between educational level of top management team on innovations in the banking sector. Wiersema and Bantel (1992) found strong positive association between educational level of TMT and strategic change. Hambrick et al. (1996) found positive relationship between average educational level of team members and propensity for strategic action and competitive response, as well as to firm performance. Similarly, Datta and Rajagopalan (1998) found that firms led by educated CEOs enjoy better performance in dynamic contexts.

Team diversity, and heterogeneity in tenure in particular have been widely studied by Upper Echelons researchers. Building on cognitive theory, Hambrick and Mason, (1984) argued that diversity may reflect variety of experiences, skills and opinions, values and beliefs. Greater demographic, and, therefore, cognitive diversity may serve to prevent cohesiveness, stimulate debate and thorough decision-making (Forbes and Milliken, 1999; Hambrick et al., 1996; Hambrick and Mason, 1984; Miller, Burke, and Glick, 1998). Heterogeneity in tenure captures diversity in experiences, information, and perspectives relevant to cognitive tasks, which, for instance, led to higher levels of decision comprehensiveness in the study of Simons, Pelled, and Smith (1999). Boeker (1997b) found that team tenure heterogeneity was positively associated with strategic change in asample of 67 semiconductor producers over a period of 1978-1992. Eisenhardt and Schoonhoven (1990) found that industry tenure heterogeneity of TMT positively influenced growth of young firms. Other scholars emphasized negative implications of demographic diversity for communication (Forbes and Milliken, 1999; Pelled, Eisenhardt, and Xin, 1999). Heterogeneity in organizational tenure was positively related to propensity for action, and negatively to the speed of strategic response in the study of Hambrick et al., (1996). Smith et al., (1994) and Miller, Burke, and Glick (1998) also observed downside effects of team diversity

on team decision making. Carpenter and Fredrickson (2001) found positive association between team tenure diversity and degree of firm internationalization, concluding that managers of internationalized firms need diverse network ties and experiences to manage the complex interdependent organizations effectively.

Though less popular that team diversity, **team size** variable appeared in the focus of a number of Upper Echelon studies. Large groups have an advantage of greater capabilities for absorption and storage of diverse information, higher number of available critical judgments in decision-making and potential solutions (Haleblian and Finkelstein, 1993). Large groups also allow task division and specialization among members that in turn promote expertise in each particular domain (Eisenhardt and Schoonhoven, 1990). Advantages of larger teams are particularly significant in uncertain complex environments (Hambrick and Mason, 1984; Haleblian and Finkelstein, 1993). Problems with coordination and control constitute the downside of large teams (Smith *et al.*, 1994).

Eisenhardt and Schoonhoven (1990) found positive effects of team size on growth of young firms. In the study of Haleblian and Finkelstein (1993), team size positively affected firm performance under turbulence, but not in a stable environment. In the study of Simons, Pelled, and Smith (1999) team size positively affected firm performance. Size of the group was associated with both desirable task conflict, and counterproductive emotional conflict in the study of Pelled et al. (1999). Hambrick *et al.*, (1996) found negative relationship between team size, and significance of strategic change.

Sanders and Carpenter (1998) found that TMT size is positively associated with degree of firm internationalization since international operations are inherently more complex in terms of scope and nature of problems they impose on decision-makers.

Relatively few studies have addressed the effects of TMT structure in the **international setting**. Though little empirical evidence is available (Carpenter and Fredrickson, 2001), findings include positive relationship between size of TMT and degree of internationalization (Sanders and Carpenter, 1998), tenure heterogeneity and internationalization (Carpenter and Fredrickson, 2001), diversity of international experiences of top managers and firm's global strategic posture (Carpenter and Fredrickson 2001; Sambharya, 1996). Studying the implications for performance, Roth (1995) reported positive association between CEO's international experience and performance of interdependent foreign subsidiaries.

2.4 Self-categorization and Conflict

The gap between realized and potential diversity of individual inputs in heterogeneous teams (cf. Milliken and Martins, 1996) has traditionally been seen as a result of adverse effects of diversity on team dynamics (Ancona and Caldwell, 1992; Levine and Moreland, 1998). Recent work on diversity in the workplace (Earley and Mosakowski, 2000; Elsass and Graves, 1997; Lau and Murninghan, 1998) and intragroup conflict (Amason, 1996; Jehn, 1995, 1997; Jehn, Northcraft, and Neale, 1999; Knight et al, 1999; Pelled et al., 1999) shed new light on social processes in heterogeneous teams, opening novel perspectives on effective management of diversity in groups. This stream of research is rooted in theories developed within the field of social psychology, primarily social identity and self-categorization theories

Developed by Henry Tajfel and John Turner (Tajfel, 1974; Tajfel and Turner, 1979; Turner, 1982), social identity theory suggests that, seeking to improve the image of themselves, individuals create positive image of salient categories (ethnic, national, professional, etc.), membership with which forms an element of self-concept. In a process of categorization, people define boundaries of groups by constructing stereotypes and perceptions of group norms and assign others and self to the contextually relevant category (Hogg, 1996: 229). Engaging in intergroup social comparisons, individuals establish and confirm ingroup-favoring evaluative distinctiveness, thus maintaining positive social identity (Hogg and Terry, 2000; Turner, 1982).

Self-categorization theory addresses group processes and the psychological nature of group membership – unlike the social identity theory that emphasizes intergroup relations and social change (Hogg, 1996).

The process of social categorization affects the perceived similarity between a focal individual and the group prototype, defined as a fuzzy set of characteristic features that most members of the category possess, often represented by exemplary members in small groups (Yzerbyt et al, 1997). As a consequence, the attributes and values associated with a group appear more homogeneous and extreme than they are in reality (Moscovici and Doise, 1996). Furthermore, in an associated process of *depersonalization*, individuals are perceived as embodiments of the relevant prototype while the individuating characteristics are largely ignored (Larkey, 1996). Similarly, self-categorization depersonalizes self-concept by assimilating to the ingroup prototype (Turner, 1982; Hogg and Terry, 2000). In the other terms, internalizing the

social prototype results in self-perception and behavior conforming to the salient category membership.

Research in organizational psychology suggests that organizational groups are often highly correlated with demographic groups (Brickson, 2000; Levine and Moreland, 1998); while apparent attributes, such as race, nationality, gender, age, department membership, profession or education are especially likely to elicit stereotypes and provide cues for categorization (Harrison, Price and Bell, 1998; Milliken and Martins, 1996; Pelled et al., 1999; Watson, Kumar, and Michalesen, 1993).

Categorization in workplace may have far-reaching consequences for group dynamics and performance. Recent empirical work showed that demographically diverse groups are less likely to develop a shared system of beliefs than homogenous groups (Chattopadhyay et al, 1999; Knight et al, 1999). Lacking distinctive observable characteristics, but also shared beliefs, heterogeneous groups are less likely to form a distinct social category; membership with these teams is less likely to become a part of self-concept (Harrison, Price, and Bell, 1998). As a consequence, members of diverse groups tend to experience little attachment to their units, as shown by Chattopadhyay (1999), Smith *et al,* (1994), and Tsui, Egan, and O'Reilly (1992).

The use of knowledge and skills in a workgroup depends on ability of members to cooperate; however, the necessary mutual trust is difficult to sustain in groups with low levels of interpersonal attraction (Forbes and Milliken, 1999). Hence, Dooley and Fryxell (1999) found that affective group membership allows for constructive processing of diverging opinions among group members. In cohesive groups, a belief exists that members are working toward group goals; disagreements are interpreted as healthy, task-oriented exchange of diverse information and judgments (*cognitive conflict*), contributing to the quality of decisions as various alternatives are considered. On the contrary, under little interpersonal attraction, task-related disagreement may be interpreted as personal criticism, the evolving dispute may focus on personal incompatibilities (*affective conflict*), triggering interpersonal clashes involving anger, frustration and other negative feelings (Amason, 1996; Pelled et al., 1999). Negative emotionality is prohibitive for exchange of ideas by team members (Jehn, 1997; Pelled et al., 1999); affective conflicts interfere with task-oriented effort as group members focus on reducing threats, increasing power and attempting to build cohesion rather than working on task (Jehn, 1997). Indeed, the two types of conflict are often correlated (Jehn et al, 1999; Pelled et al., 1999). Team

members may get a feeling that their competence is being challenged when facing criticism; task-related disagreements may generate emotionally harsh language that can be taken personally – even in cohesive teams (Forbes and Milliken, 1999; Pelled et al., 1999)

This may lead to conclusion that group heterogeneity leads to (equally) increased cognitive and affective conflict – due to higher diversity in experiences and skills, and weaker group identity of diverse teams, respectively. Yet, there are indications that not all types of diversity are equally likely to contribute to the dysfunctional affective conflict. Thus, Earley and Mosakowski (2000) found that multinational teams consisting of a number of relatively homogeneous national subgroups – where subgroup identities dominate – perform worse than monolithic and highly heterogeneous teams (that tend to develop team identity on the basis of new "hybrid" culture). Similarly, Lau and Murningham (1998) hypothesized that when group subdivision into (relatively homogenous) subgroups is facilitated by observable attributes, dysfunctional conflict is most likely to occur. Disagreements on critical task-related issues may awake the dormant "faultlines" - "hypothetical dividing lines that may split the group into subgroups on the basis of one or more attributes" – accentuating the intragroup differences, activating the old prejudices, and trigger the affective conflict. Indeed, people seldom enter a group whose members differ from themselves. Even though the marginal group members experience socialization pressures within the group, aimed at converting them into full group members, these attempts often fail when differences are critical (Levine and Moreland, 1998).

Literatures on socialization and social information processing use the notion of *multiplexity* to describe the dyadic relationships in which individuals are (simultaneously) similar on a number of attributes (Erickson, 1988). While similarity on certain attributes may become salient only in particular situations (e.g. professional background for attitude comparison on professional issues, gender for comparison on certain social aspects), social influence is strongest when individuals are multiply-tied, i.e. similar on a number of attributes, and thus serve as peers on an entire range of issues both in instrumental and social exchange (Elsass and Graves, 1997). A distinct social category is most likely to develop when category members are multiply-tied, and (as a consequence) share multiple attitudes. If this category embraces only a part of a decision-making unit, leaving a number of outsiders, or when a number of distinct subgroups develop within a unit, team identity and attachment to the unit are likely to be especially weak, and group processes may be distorted. In this situation, the task-related disagreements are most likely to lead

to dysfunctional affective conflict (Jehn, 1997), process losses are high, use of cognitive diversity is low, as is the affective acceptance, necessary for effective implementation of the decisions (Amason, 1996; Homburg, Krohmer, and Workman, 1999).

Earlier empirical work – apart from study by Earley and Mosakowski (2000) – did not account for demographic predictors of subgroup formation, this may to some extent explain the contradictory findings of the diversity research (Lawrence, 1997; Pitcher and Smith, 2001).

2.5 Member Socialization

Research on workgroups present systematic support for the intuitive idea that group process changes over time, as members undergo the process of socialization (cf. Earley and Mosakowski, 2000; Jehn and Shah, 1997; Katz, 1982; Terborg, Castore, and DeNinno, 1976; Watson et al, 1998). 'Raw recruits' are transformed into effective, participating group members by acquiring skills, knowledge, values, perspectives, expected behaviors, social knowledge in the workplace (Chatman, 1991; Fondas and Wiersema, 1997; Van Maanen and Schein, 1979), and by developing interpersonal relationships with other organization members (Adkins, 1995). By internalizing the pivotal values of the group, gradually adopting the stable attitudes of the team (Chattopadhyay et al, 1999; Erickson, 1988), new members allow the set of rules, norms, expectation and roles – important for team interaction and performance (Earley and Mosakowski, 2000) – to persist in the group. While member socialization tends to improve group process, social influence may negatively affect the diversity of opinions, perspectives, sources of information as members adhere to common attitudes and beliefs (Cialdini and Trost, 1998; Erickson, 1988). The latter effect may cause rigidity and inertia, negatively affect performance (Fondas and Wiersema, 1995; Katz, 1982).

While new group members are often concerned with social acceptance and may deliberately withhold diverging information and opinions; interactions between familiar members are free from these cognitive constraints. From this perspective, team socialization is likely to promote healthy, open exchange of opinions (Gruenfeld et al, 1996). Consistent with the idea that newly formed groups are concerned with social acceptance and thus prone to conformity, the longitudinal laboratory study by Gruenfeld et al (1996) found that groups composed of strangers are more likely to adopt the decision dictated by majority preference. These unsocialized groups tend to rely on information that is shared among team members at the expense of unique

individual inputs, not making use of the whole scope of available information and judgements - the so-called common knowledge effect (Gigone and Hastie, 1993, 1997). Groups of familiar individuals, on the other hand, showed more ability to incorporate the unique information of individual members into their solution and thus showed better overall performance. Researchers concluded that member socialization often "serves as buffer against dysfunctional responses to normative influence"(p.11).

Jehn and Shah (1997) argued that not only familiarity of group members is such may be beneficial for group performance, but also the degree of familiarity is important. In their experiment, groups of "friends" reported more encouragement, commitment, and cooperation compared to "acquaintances". Due to better group dynamics, "friends" performed better in both motor and cognitive tasks. Interestingly, these groups showed more critical evaluation in cognitive tasks than groups of acquaintances, and less in repetitive tasks (where it is not beneficial for performance). These results clearly signal superior group process at highly socialized groups.

Teams characterized by high levels of cognitive diversity may especially benefit from the process of socialization - due to the associated improvement in the use diverse information. When group members have considerable experience of working together, they are likely to posses knowledge of each other's skills, abilities, and external ties (Gruenfeld et al 1996). When a common "hybrid" group set of norms and values – necessary for effective communication – is developed, diverse groups may be able to incorporate the wide range of information and perspectives in the decision-making. In a longitudinal study of Watson, Kumar and Michaelsen (1993), newly formed (culturally) homogeneous work groups scored higher on group process, and showed better performance on a number of dimensions – including range of perspectives, problem identification, alternatives generated, and quality of solutions – than culturally heterogeneous groups. However, in the fourth period of the study – corresponding to the 17th week of joint work, not only did heterogeneous teams cover the initial gap in group process and performance, but also scored higher on some performance measures, namely, range of perspectives and number of alternatives generated.

While the above research was conducted in laboratory settings and traced the evolution of group processes over the period of several months, little evidence exists on the mechanisms of socialization operating over longer periods (e.g. several years, which often occurs in

organizations). Katz (1982) studied communication dynamics of Rand project groups. The study found that communication (both internal and external) increases in the first 2.5-5 years, and subsequently declines; performance follows a similar curve. The author concluded that long-tenured teams develop a set of shared beliefs about their work settings as well as common views, commitments and solutions strategies. Given the certainty facilitated by homogeneous tendencies, groups with shared systems of meaning and beliefs develop great stability and resistance to change.

2.6 Conclusion

The research reviewed above offers important insights into the functioning of top management teams, the influence of individual traits and experiences of managers. At the same time, earlier work leaves many questions, for instance, with respect to specific mechanisms operating in diverse groups, the (long-term) effect of team socialization and joint experience of members. The lack of theory and evidence on how the composition of TMTs (in terms of observable characteristics) influences strategic innovation and performance in the international setting is particularly surprising. In this sense, the trend -- apparent in recent work -- of introducing the rigorous logic and methods of core disciplines in social sciences into the studies of managers and firms appears highly appropriate, as is the tendency of greater theoretical integration between previously independent traditions. These exciting developments have inspired the research presented further.

Chapter 3[1]

What Sort of Top Management Team is Needed at the Helm of Internationally Diversified Firms?

3.1 Abstract

Many firms have entered foreign countries over the past few decades; however, little is known about what sort of top management team (TMT) is needed at internationalized firms. Merging insights from upper echelons theory, research on internationalizing firms, and structural holes theory, this paper argues that internationally diversified companies require *entrepreneurial* executives (cf. Burt, 1992) who are able to link loosely connected groups, as well as handle the many other complexities of their jobs. This requires CEOs and TMTs with well-developed social networks and large information processing capacity. Our theory leads to hypotheses on how CEO and TMT characteristics are related to a firm's degree of international diversification. The hypotheses were tested on panel data on twenty-five firms over a period of three decades. Consistent with predictions, we found that internationally diversified firms tend to be run by CEOs whose tenure with the team is relatively long and TMTs with relatively great tenure, heterogeneity, and size.

[1] This chapter is the result of joint work with Harry Barkema. It appeared in M. Hitt, R.D Ireland, Camp S.M., and Sexton, D.L. (Eds.), *Strategic Entrepreneurship: Creating a New Mindset*, Blackwell Publishers Ltd.

3.2 Introduction

Globalization is one of the most important trends of the last decade (Hitt *et al.*, 1998), and many firms are now in varying stages of internationalization. What sort of CEOs and TMTs are needed at the helm of internationally diversified firms? Do these firms need different executives as compared to less internationalized firms? *If* executives at internationalized firms are different, *how* are they different? These questions formed the starting point for the present study.

A large number of prior studies have explored the relationship between CEO and TMT characteristics and a firm's level of technological and administrative innovation (Bantel and Jackson, 1989), changes in strategy (Boeker, 1997a, 1997b; Finkelstein and Hambrick, 1990; Grimm and Smith, 1991; Hambrick, Cho, and Chen, 1996; Wiersema and Bantel, 1992), and so on. However, only a few studies have explored how CEO and TMT characteristics vary with a firm's degree of international diversification (Carpenter and Fredrickson, 2001; Roth, 1995; Sambharya, 1996; Sanders and Carpenter, 1998).

In the present paper, we develop and test novel theory in this respect, merging insights from upper echelons theory (e.g., Eisenhardt and Schoonhoven, 1990; Hambrick and Mason, 1984), research on internationalizing firms (e.g., Birkinshaw and Hood, 1998; Hedlund, 1994), and structural holes theory (Burt, 1992). We argue that highly internationalized firms, with their many different groups (departments, geographical units, divisional units, etc.), require *"entrepreneurial"* executives (cf. Burt, 1992; Burt, Hogarth, and Michaud, 2000) who are able to link loosely connected groups, as well as handle the many other complexities associated with running such firms. This leads to hypotheses on how a variety of CEO and TMT characteristics are related to a firm's degree of international diversification. The hypotheses are tested on panel data on twenty-five firms that internationalized over a period of more than three decades (1966-1998).

From a methodological perspective, our study adds to prior work by examining panel data and by using a better measure of international diversification, i.e., an entropy measure (cf., Hoskisson *et al.*, 1993), than most previous studies have done. The results corroborate a key notion of our theory: that internationally diversified firms are indeed run by a different sort of

executives (than less internationalized firms): CEOs with relatively long tenure and TMTs of considerable tenure, heterogeneity, and size.

The paper is structured as follows. In section 2, we review prior work on TMT demographic characteristics and on internationalizing firms. Our theory and hypotheses are presented in section 3. The sample, methodology, and empirical results are discussed in section 4. The paper ends with conclusions and suggestions for further research.

3.3. Background

Upper Echelons Theory

Upper echelons theory (Hambrick and Mason, 1984) essentially argues that the value created by executives is due to their exercise of discretion. How they use this discretion, for instance, what strategic decisions are made, is subject to bounded rationality, which implies information search and decision heuristics (Simon, 1945). These processes depend on the managers' cognitive basis and values, which in turn are shaped by their past experiences. A key assumption of upper echelons theory is that these individual attributes can usefully be captured by a manager's demographic characteristics, such as functional and educational background, tenure, and other observable demographic characteristics (Hambrick and Mason, 1984; Pfeffer, 1983).

Perhaps the most often studied demographic characteristic is CEO or TMT (mean) *tenure*. Upper echelons theory argues that, over time, executives become "rigid" and "inert," and more inclined to rely on routines when gathering and processing information. In the words of Miller (1991), they become "stale in the saddle," which reduces the likelihood of strategic innovation and change. Consistent with this theory, Bantel and Jackson (1989) found that long-tenured executives led firms with lower levels of technological innovation than short-tenured executives did. Further empirical support came from studies which found that TMT tenure is positively associated with strategic conformity and commitment to the status quo (Finkelstein and Hambrick, 1990; Hambrick, Geletkanycz and Fredrickson, 1993), and negatively related to the likelihood and scope of strategic action (Boeker, 1997b; Grimm and Smith, 1991; Hambrick, Cho and Chen, 1996). However, Wiersema and Bantel (1992) found that strategic change was associated with considerable team tenure.

Other studies have explored the relationship between a CEO's and TMT's level of *formal education* and the strategy of their firms. High levels of education are associated with a high capacity for information processing and an ability to discern patterns and discriminate among a variety of stimuli (Schroder, Driver, and Streufert, 1967). Educated individuals are more likely to engage in boundary spanning, to tolerate ambiguity, and to show an ability to "integrate complexity" (Dollinger, 1984). Consistent with these ideas, Bantel and Jackson (1989) found that the level of education was positively related to a firm's level of technological innovation. Further support came from Hambrick, Cho, and Chen (1996) and Wiersema and Bantel (1992), who found a positive relationship between education and propensity for action.

Hitt and Tyler (1991) did not find a relationship between the level of education (or a direct measure of cognitive complexity) and strategic decisions. Their study also casts doubt on the validity of education as a measure of cognitive complexity ($r = 0.07$), although Wally and Baum (1994) found a correlation of 0.5 between educational level and a direct measure of cognitive complexity. Hence, the evidence in favor of a relationship between executive education and strategy appears to be weaker than the evidence in favor of tenure – discussed above – possibly because the validity of education as a measure of cognitive ability and complexity is not high.

Prior research has not only studied the (mean) *level* of demographic attributes of CEOs and top teams, such as tenure and education, but also the diversity or *heterogeneity* in TMT characteristics. This research assumes that heterogeneity in TMT characteristics captures cognitive diversity, defined in terms of differences in beliefs and preferences held by upper-echelon executives of a TMT (Miller, Burke, and Glick, 1998). As these authors argue, cognitive diversity is positively related to the comprehensiveness of strategic decision making and the extensiveness of strategic planning. A greater diversity in views and opinions, both directly and through the implied lower level of cohesion and increased challenging of other viewpoints, leads to more discussions, more resources spent on analyses and consultants, and so on. While Miller, Burke, and Glick (1998) did not observe the predicted effects of diversity, Hambrick et al. (1996) found positive relationships between TMT tenure diversity and educational diversity and the likelihood for strategic action; other results consistent with these ideas were found by Boeker (1997b) and Wiersema and Bantel (1992).

Likewise, Michel and Hambrick (1992) found that heterogeneously tenured teams were found in firms with complex, interdependent corporate structures. However, other researchers have argued that higher levels of heterogeneity (eventually) lead to less communication and higher levels of dispute and disagreement within a TMT, which may hurt the process of reaching solutions, and eventually firm performance. Perhaps this explains why evidence on the relationship between demographic diversity and firm performance is mixed (for overviews, see Finkelstein and Hambrick, 1996; Miller *et al.*, 1998).

Finally, *top team size* is believed to capture TMT diversity as well, since larger teams are more likely to encompass a variety of views, cause-effect relationships, educational and functional backgrounds, and so on. Larger teams are also believed to have greater capacity for information processing. Indeed, various studies have found a positive relation between TMT size and complex turbulent environments (Barkema and Vermeulen, 1998a; Eisenhardt and Schoonhoven, 1990; Haleblian and Finkelstein, 1993).

In view of the importance of globalization in recent decades, surprisingly little research has explored demographic characteristics in the international setting (Carpenter and Fredrickson, 2001). Earlier research has primarily addressed international experience of top management teams. For instance, positive relation was found between the amount and diversity of TMT international experience and a firm's global strategic posture (Carpenter and Fredrickson, 2001; Sambharya, 1996). Roth (1995) found that a CEO's international experience contributed to firm performance in case of highly interdependent subsidiaries. Furthermore, Sanders and Carpenter (1998) found a positive relationship between TMT size and a firm's degree of international diversification, while Carpenter and Fredrickson (2001) found a positive relationship between TMT educational and tenure heterogeneity and a firm's global strategic posture. The latter result is consistent with the idea that TMTs in internationally diversified firms require more diverse network ties, skills, and world views; that top team diversity promotes trust and perceptions of procedural justice among a firm's different product and geographic unit managers, as well as inter-unit cooperation and coordination. Finally, Barkema and Vermeulen (1998a) found that TMT size and heterogeneity contributed to an MNC's ability to learn from its foreign experience, particularly, from foreign failures.

Managing Multinational Corporations

Running a large, internationally diversified corporation is a highly complex task. In early stages of internationalization, firms have only a few foreign subsidiaries, which typically serve as "appendices" of the firm, involved in marketing, selling, and distributing home-grown products and services in the particular foreign country or region (Malnight, 1995, 1996). Command structures are "top down." However, in later stages of internationalization, subsidiaries often acquire other tasks as well, for instance, the development or testing of new products. Theoretical and empirical (inductive) research by Malnight (1995) and Birkinshaw and colleagues (Birkinshaw, 1997; Birkinshaw and Hood, 1998) suggests that subsidiaries may even compete internally to win the opportunity to develop or coordinate the testing of a new product for the whole firm. A foreign subsidiary may also acquire a world mandate for a product or process (Birkinshaw and Hood, 1998), or develop towards a regional center for many of the firm's operations (Ghauri, 1990). Hence, managers of subsidiaries can also be entrepreneurs, in the sense that they wish to build an important subsidiary, compete with other subsidiaries to fulfill roles like coordinating (world-wide) the development or testing of a new drug, and so on.

Horizontal streams of data, ideas, people, and other resources are much more common in full-fledged multinational corporations (MNCs) than in firms at early stages of internationalization (Bartlett and Ghoshal, 1989; Hedlund, 1994; Malnight, 1995, 1996). Top teams of MNCs, rather than aggressively expanding overseas and breaking home-grown organization cultures and structures to incorporate foreign operations as in early stages of internationalization (Bartlett, 1981), are more heavily involved in balancing the various powers within the firm, for instance, of functional, divisional and regional managers (Bartlett, 1981). These TMTs can create value in various ways: by facilitating the vast horizontal streams of knowledge and people within their firm (Bartlett and Ghoshal, 1989; Hedlund, 1994; Malnight, 1995), by monitoring a wide variety of subsidiaries in many countries and cultures, by deciding which firm is awarded the development of a new product or other responsibility (Birkinshaw and Hood, 1998), etc. In addition to these internal challenges, these TMTs also meet many external opportunities and threats in terms of governments, customers, suppliers, and competitors in a variety of cultural and institutional settings (Barkema, Bell and Pennings, 1996). All of this adds to the complexity of managing a highly internationalized firm.

We are now ready to develop theory and hypotheses on which CEO and TMT characteristics fit internationally diversified firms and are more likely to be encountered at the top of full-fledged MNCs as compared to less internationalized firms.

3.4 Theory and Hypotheses

Prior research in the domain of upper echelons theory has emphasized that, over time, job tenure promotes inertia and rigidity; information gathering and processing is increasingly governed by routines, and fewer alternatives are considered when searching solutions. In other words, executives become "stale in the saddle" (Miller, 1991). Consistent with these ideas, many studies have found that "tenure" is negatively associated with the likelihood and scope of strategic change (Boeker, 1997b; Finkelstein and Hambrick, 1990; Grimm and Smith, 1991; Hambrick, Cho and Chen, 1996; Hambrick, Geletkanycz and Fredrickson, 1993).

However, we believe that the lack of strategic change may also, at least in part, be caused by something else. Over time, executives develop "social exchange relationships" (Homans, 1961) with increasing numbers of managers in their firm, which implies mutual "gift giving" in terms of time, effort, information, and perhaps even friendship. These exchange relationships endow CEOs with power (over the time, effort, and information of their subordinates), but also obligate them. CEOs who have been in office for a long time may have developed strong exchange relationships with many managers, in particular if they appointed these managers to their present positions. This network encapsulates long-tenured CEOs in a diffuse network of obligations and general commitments, but also endows them with social networks and information networks, the information and power to sway decisions in their own direction, and the option to establish non-redundant links between different groups within their firm.

The concept of "structural holes" (Burt, 1992) is particularly appropriate in this setting. Structural hole theory emphasizes that "entrepreneurial" managers (cf. Burt, 1992; Burt, Hogarth, and Michaud, 2000) who actively combine different and otherwise loosely connected groups are particularly powerful and may be particularly valuable to their firm. People, departments, and subsidiaries have a tendency to focus on their immediate tasks to the exclusion of adjacent tasks. As a result, "structural holes" emerge in the organization: groups lose track of other groups within the firm or of the external environment. Hence, large benefits are possible for managers

who act as brokers – of information, people, and other resources – between sparsely connected groups; these managers are much more beneficial for their firms than managers who run their organizations on purely bureaucratic grounds. Prior research has confirmed such success for American managers, as well as for French managers (e.g., Burt, Hogarth, and Michaud, 2000). Social ties may even develop with managers several layers down in the organization as, for example, a successful CEO such as Lou Gerstner demonstrated at various companies he worked for (Finkelstein and Hambrick, 1996).

In highly complex organizations such as MNCs, it appears particularly important to link different, otherwise loosely connected units and serve as a broker between them. MNCs may have many different geographical, divisional, and functional "kingdoms" which tend to focus on their own activities rather than on the activities of others or their environment, and where horizontal and informal flows of people, information, and resources are crucial for the firm's success (Bartlett and Ghoshal, 1989; Hedlund, 1994). With increasing tenure, site-visits of foreign subsidiaries, and so on, CEOs may develop dense networks with a variety of functional, divisional and geographic managers. Over time, they may also acquire the experiential knowledge to effectively run a variety of national, functional, and perhaps industry cultures (Argyres, 1996; Johanson and Vahlne, 1977), as well as the political savvy to engage in arbitrage between different political factions (Sutcliffe, 1994). They may also learn about the abilities of many individual managers and subsidiaries to develop products and take on responsibilities, which in turn helps them to make good decisions when distributing world mandates and other responsibilities among subsidiaries (cf. Birkinshaw and Hood, 1998). All of this may accumulate with on-the-job experience and become increasingly important as companies become more internationalized. We therefore hypothesize:

> *H1a: CEO tenure is positively related to the degree of international diversification of the firm.*

For similar reasons, we expect that at internationally diversified firms, tenure is important for other members of the TMT as well (i.e., the implied networks with a variety of groups within the MNC, the experiential knowledge to connect subsidiaries in a variety of national cultures, etc.).

What Sort of Top Management Team is Needed?

In early stages of internationalization, cognitive and strategic frame-breaking in terms of going beyond national settings is needed (Barkema and Vermeulen, 1998a), and younger teams of managers with short tenure and less established routines are more likely to break the mold, venture into the unknown, and meet and handle unprecedented opportunities and threats (Hambrick and Mason, 1984; Keck, 1997; Thomas, Litschert, and Ramaswamy, 1991; Wiersema and Bantel, 1992). In other words, a different sort of "entrepreneur" may be needed than the sort of entrepreneurial executive (cf. Burt, 1992) needed at highly internationalized firms. In the latter firms, a strong culture of veteran teams promotes incremental learning and change (Huy, 1999) which is more congruent with managing a full-fledged MNC with its complex web of relationships between subsidiaries and with headquarters; vast horizontal streams of ideas, knowledge, people, products, services, and so on. Greater TMT tenure also promotes social cohesion and a strong group identity (Bantel and Jackson, 1989; Boeker, 1997b; Finkelstein and Hambrick, 1996; Hambrick and Mason, 1984; Keck, 1997; Michel and Hambrick, 1992; Pfeffer, 1983). This helps the top team to counterbalance the various political powers within the MNC, to advance their own corporate agenda, and to meet the vast information processing needs (Roth, 1995) which managing a highly complex firm requires (Sanders and Carpenter, 1998). Hence, we expect that:

> *H1b: TMT (mean) tenure is positively related to the degree of international diversification of the firm.*

Managing a large, internationally diversified firm is inherently more complex than running a domestic company. Combining the complexities of balancing many different political factions within the MNC, managing many subsidiaries in a variety of cultural and institutional settings, and meeting the challenge of competitors in a variety of national and regional settings is a highly complex task from a cognitive perspective (Roth, 1995; Sambharya, 1996; Sanders and Carpenter, 1998). Consistent with this idea, Calori, Johnson and Sarnin (1994) found that executives of internationally diversified firms have more complex mental maps than those at domestic firms. A number of studies have found that cognitive complexity, i.e., the ability to discern patterns and distinguish between objects, is positively related to amount of formal education (see Finkelstein and Hambrick, 1996; Wally and Baum, 1994). Consistent with this

theory (i.e., cognitive theory and traditional upper echelons theory), we therefore hypothesize a positive relationship between formal education, as a proxy of cognitive complexity, and a firm's degree of international diversification.

There is reason for caution since there are also studies such as Hitt and Tyler (1991) that did not find a relationship between cognitive complexity and strategic decisions. Their study also casts doubt on the validity of formal education as a measure of cognitive complexity, although Wally and Baum (1994) found more support. It could also be argued that there is considerable screening of managers before any of them is promoted to the top team and it is therefore unlikely that managers who are not cognitively complex will be selected. Nevertheless, we hypothesize that – in relative terms – executives at internationally diversified firms will show a tendency to be *more* cognitively complex than executives at less internationalized firms, and that (consistent with traditional upper echelons theory) formal education is a useful measure to capture such differences. Formally:

> *H2a: The amount of formal education of the CEO is positively related to the degree of international diversification of the firm.*
> *H2b: The (mean) formal education of the TMT is positively related to the degree of international diversification of the firm.*

While, in general, greater tenure of CEOs and TMT members is relatively favorable at internationally diversified firms (in terms of developing networks and knowledge over time), we also expect, *ceteris paribus*, that *heterogeneity* in team tenure is favorable, for a variety of reasons. First, managers who entered the top team at different points in time have a greater variety of social networks within and outside the firm. Executives who joined the TMT relatively recently are more likely to complement the networks of executives who joined (much) earlier in terms of connecting otherwise loosely connected groups, departments, divisions, geographic regions, and different layers in the MNC. This implies fewer "structural holes" within the company and consequently fewer missed opportunities for beneficial combinations. Moreover, executives who joined the top team at different points in time are more likely to represent a variety of experiences (including recent hands-on experience with major or rising divisions or

regional centers) and knowledge structures. We expect that this helps them handle the complexities of running an MNC (Carpenter and Fredrickson, 2001).

So far we have discussed TMT heterogeneity in tenure. We also expect that heterogeneity in educational background – engineering, law, or business administration, etc. – makes it more likely that a TMT connects different functional, divisional, and geographic units, encompasses a variety of experiences and cognitive structures, and enhances informal and horizontal flows of ideas, data, and people within the firm. All of this becomes more important at higher levels of international diversification. Formally:

H3a: TMT tenure heterogeneity is positively related to the degree of international diversification of the firm.
H3b: TMT educational heterogeneity is positively related to the degree of international diversification of the firm.

Finally, we expect a positive relationship between TMT size and a firm's degree of international diversification. Larger teams are more likely to link otherwise loosely connected functional, divisional, or geographic units simply because more TMT members implies more social ties with the rest of the firm. Larger teams are also more likely to contain a variety of experiences and knowledge structures and have more information-processing capacity, all of which makes them more likely to match the needs of running a highly complex MNC (Sanders and Carpenter, 1998). Larger teams can also benefit from task division and specialization of members (Eisenhardt and Schoonhoven, 1990; Haleblian and Finkelstein, 1993; Hambrick and Mason, 1984; Smith *et al.*, 1994). Congruent with these ideas, Sanders and Carpenter (1998) found a positive relationship between TMT size and the degree of internationalization of the firm, using 1992 cross-section data on 258 US firms (and using a composite measure of diversification based on foreign sales, foreign production, and geographic dispersion). We expect to find the same relationship using panel data on Dutch firms over a period of three decades and an entropy measure of international diversification. Hence, the last hypothesis to be tested in this study is:

H4: TMT size is positively related to the degree of international diversification of the firm.

3.5 Methods

Sample and Variables

Hypotheses were tested on a sample of 25 large, listed, non-financial Dutch firms from a variety of industries which internationalized between 1966 and 1998 – the time frame of the study. Data came from annual reports of these companies.

Top Team: In Dutch companies, the team of top executives is formally defined as the *Raad van Bestuur* (i.e., executive board) and therefore easily identifiable. Hence, the *TMT Size* variable is readily available from Dutch annual reports. In contrast to US practice and reflecting low power distance and reliance on teamwork commonly found in Dutch companies, there were times – especially in the socially-oriented 1970s – and companies, where the CEO position (i.e., Chairperson of the Raad van Bestuur) was not formally defined in the annual report. The Chairperson was then typically the first individual on the list of executives. However, in a few cases, top managers were simply listed in alphabetical order. In those cases, we were unable to enter data for CEO-related variables. In a few cases, we observed two Chairperson titles on the team. We then based our analysis on the average scores of the demographic variables for the two CEOs.

Education: Following Wiersema and Bantel (1992) and Boeker (1997b), education of executives was coded according to their titles. 'Drs' (*doctorandus* – Dutch title for university graduates in Economics and Social Sciences), 'MR' (Dutch university degree in Law) and 'IR' (degree in Engineering) are different university degrees. 'Dr' and 'Dr.Ir" are doctorates. Managers without a university degree had typically completed a vocational training program; they were categorized as 'no degree'.

Educational level was captured in terms of executives having a university degree or not. (The U.S. classification in terms of BA, MBA, etc., did not apply during the window of analysis). Hence, CEO educational level was captured by a dummy variable (i.e., university training or not), while the educational level of TMTs was captured by the percentage of the team members with a university degree.

Heterogeneity in educational type of the TMT was captured by the Herfindahl-Hirshman index:

$$H = \sum_{i=1}^{n} S_i^2$$

where H is the homogeneity index, S the percentage of TMT members with dominant educational track i, and n the number of different educational backgrounds. Subtraction from unity yields Blau's heterogeneity index (Wiersema and Bantel, 1992).

Executive Tenure: Tenure (including CEO tenure) was measured as tenure with the TMT. Mean tenure and tenure heterogeneity were both used in the analysis. *Tenure heterogeneity* was computed as the coefficient of variation; the standard deviation divided by the mean (Wiersema and Bantel, 1992; Boeker, 1997b).

Degree of Internationalization: Designed to capture the industry diversification of firms, the Jacquemin-Berry entropy measure (Acar and Sankaran, 1999; Boeker, 1997b; Hoskisson *et al.*, 1993; Palepu, 1985; Wiersema and Bantel, 1992) has recently been used to measure geographic diversification as well (e.g., Hitt, Hoskisson, and Kim, 1997).

$$\sum_{i=1}^{N} P_i \ln(1/P_i)$$

Originally (e.g., Palepu, 1985) P_i indicated the percentage of a firm's total sales in the ith business, with N as the number of businesses. Barkema and Vermeulen (1998b) used the entropy measure of geographic diversification at the level of cultural blocks (cf. Ronen and Shenkar, 1985). The number of ventures was used to capture presence in a region instead of sales. Following Barkema and Vermeulen (1998b), we developed a more sophisticated measure that accounts for diversification patterns at the country level. Hence, subscript i indicates the country and P_i , the share of a firm's subsidiaries located in country i. Our entropy measure of international diversification takes a value of zero if all units are located in one country and increases with even distribution of subsidiaries across countries.

Table 1. Descriptive Statistics and Correlations

	Min	Max	Mean	S.D.	N	1	2	3	4	5	6	7	8	9	10
1. Entropy	0.00	3.34	1.4312	0.8208	796	1.000									
2. Firm size (lnassets)	10.10	17.04	13.8945	1.1567	634	0.488	1.000								
3. Product diversity	3.00	54.00	16.6189	9.9976	753	-0.034	0.206	1.000							
4. Team size	1.00	17.00	4.2581	1.8651	775	0.070	0.039	-0.113	1.000						
5. Mean team tenure	1.00	18.50	7.7397	3.1172	775	0.190	0.304	0.118	-0.052	1.000					
6. Tenure diversity	0.00	1.56	0.6312	0.2964	768	0.121	0.099	0.040	0.094	-0.033	1.000				
7. % Team members with degree	0.00	1.00	0.5896	0.3468	796	0.071	0.284	-0.084	-0.202	0.075	0.084	1.000			
8. Education diversity	0.00	0.75	0.4365	0.2238	765	-0.047	0.239	-0.001	-0.064	-0.060	0.024	0.451	1.000		
9. CEO tenure	1.00	31.00	11.1226	6.4303	742	0.196	0.199	-0.042	0.170	0.606	0.325	0.014	-0.041	1.000	
10. CEO degree	0.00	1.00	0.6624	0.4678	742	0.108	0.252	-0.049	-0.183	0.026	0.148	0.691	0.328	-0.025	1.000

The problem with this measure is that it does not account for the size of ventures (i.e., we do not have data on the size of the ventures). There is no reason to believe that this limitation causes any bias. If the size of the subsidiaries varies significantly with time or across firms, time and firm dummies will capture (and control for) these effects.

Control variables: Bigger firms are likely to have larger TMTs. We therefore included the logarithm of assets as a measure of *firm size* in all regressions.

Product diversification adds to decision-making constraints imposed by geographic diversification (Hitt *et al.*, 1997; Barkema and Vermeulen, 1998b; Tallman and Li, 1996). Product diversity is measured by the number of three-digit SBI industries (the Dutch analogue of SIC codes). Descriptive statistics and correlations of variables used in our study are presented in Table 1.

Analysis

Although several statistical procedures may be used for the analysis of panel data, this study used a simple version of Fixed Effects: the LSDV (Least Squares Dummy Variable) model. We chose the Fixed Effects procedure because it is consistent under a wide set of assumptions, for example, it helps to avoid cross-sectional heteroscedasticity (Greene, 1997). The structure of our data set, i.e., an unbalanced panel with a relatively small number of firms, made the LSDV procedure particularly convenient. To make our results more robust, we also included year dummies in the regressions; hence, we have a Fixed-Firm-and-Time-Effects model.

3.6 Results

Results of the regression analyses are presented in Table 2. Model 1 contains only the control variables. As expected, firm size correlates positively with international diversification. The negative relationship between product diversification and international diversification is consistent with the idea that the governance scope of product-diversified firms may leave little cognitive capacity to handle the complexity of international interdependence (Barkema and Vermeulen, 1998b; Hitt, Hoskisson, and Ireland, 1994; Hitt, Hoskisson, and Kim, 1997).

Model 2 adds the CEO variables: tenure and level of formal education. Consistent with H1a, the effect of CEO tenure is positive and significant ($p<0.05$). However, H2a, concerning the effect of the level of CEO education, is not corroborated.

Table 2. LSDV Regression Results

Dependent: entropy measure of international diversification

Variable [a]	Model 1 (N=626)	Model 2 (N=598)	Model 3 (N=612)	Model 4 (N=585)
Constant	-2.548***	-2.533***	-2.996***	-3.051***
Controls				
Firm size	0.222***	0.209***	0.212***	0.208***
Product diversity	-3.216E-03	-1.258E-02**	-6.422E-03†	-1.536E-02***
Team Structure				
Team size			3.907E-02***	3.763E-02***
Mean tenure			2.530E-02***	2.304E-02***
Tenure diversity			0.115**	0.111*
Percent of members with degree			2.519E-03	-1.528E-02
Educational diversity			0.309***	0.409***
CEO traits				
CEO tenure		5.603E-03*		-1.088E-03
CEO with degree		5.060E-02		-4.193E-02
Model fit				
F-value	52.164***	51.610***	51.034***	50.140***
R square	0.849	0.859	0.861	0.869
Adj. R square	0.833	0.842	0.844	0.851

[a] Firm dummies not shown

*** $p< 0.001$ ** $p< 0.01$ * - $p<0.05$ † $p<0.10$ (one-tailed if hypothesized, two-tailed if not)

Model 3 captures the TMT variables. Consistent with H1b, the effect of TMT (mean) tenure is positive and highly significant ($p<0.001$). The hypothesized effect of the mean level of education of the TMT (H2b) is not corroborated. However, both hypothesized heterogeneity

effects, that of TMT tenure (H3a) and education (H3b), are strongly corroborated ($p<0.001$ and $p<0.01$, respectively). The hypothesized influence of TMT size (H4) is supported as well ($p<0.001$). Finally, Model 4 shows that when both CEO and TMT variables are included in the model, the CEO effects disappear.

In order to study the direction of causal effects, in a follow-up analysis we tested the models with TMT and CEO characteristics lagging international diversification by 1 and 2 years. Results were very similar to the presented above, yet with higher significance of explanatory variables and better model fit. These findings suggest that in our sample, international diversification of the firm shapes TMT composition, rather than the other way around.

3.7 Discussion and Conclusions

A key notion of our paper is that internationally diversified firms require "entrepreneurial" (cf. Burt, 1992; Burt et al., 2000) executives who are able to link loosely connected groups within their firms to enhance (beneficial) informal flows of data, ideas, people, and other resources. These executives also face highly complex internal and external environments (i.e., governments, subsidiaries, suppliers, customers, and competitors in a variety of cultural and institutional environments). Hence, internationally diversified firms require CEOs and TMTs with well-developed social networks and large information-processing capacity. Implications of our theory were tested using panel data on 25 firms over a period of more than three decades (1966-1998). Consistent with predictions, we found that CEO and TMT *tenure* were positively related to a firm's degree of international diversification. Further support came from positive relationships between TMT *heterogeneity (of tenure and education)* and TMT *size*, and the degree of international diversification. Finally, predictions about CEO and TMT *level of education* were not corroborated.

Our study adds to prior work in several ways. Our theory – anchored in upper echelons theory, research on internationalizing firms, and structural holes theory – was consistent with the idea that internationally diversified firms require entrepreneurial executives (cf. Burt, 1992; Burt et al., 2000) who are able to bridge "structural holes" within their firms through non-redundant ties between otherwise loosely connected groups. Perhaps these executives differ from the sort of entrepreneurial executives needed at early stages of internationalization (see also Lu and

Beamish, 2001). The task of these executives is to "break the mold" (i.e., domestic mindsets) and venture into the unknown (i.e., foreign countries) – the sort of strategic change typically associated with executives at low levels of tenure (Boeker, 1997b; Finkelstein and Hambrick, 1990; Grimm and Smith, 1991;Hambrick et al., 1993; Hambrick et al., 1996). The implication of all this would be, consistent with the evidence in this paper, that firms require different sorts of entrepreneurial managers at different stages of internationalization; this is perhaps one of the most exciting ideas stemming from our paper.

Our study (based on panel data on Dutch firms) also adds at a more empirical level to the small but growing literature on what sort of top managers are needed in international corporations. Prior studies have found strong support for the idea that international experience (level and heterogeneity) is important for the TMTs of MNCs. Based on a different measure of diversification, data from a different culture (the Netherlands instead of the US) and panel data, our study confirms earlier results on TMT heterogeneity and size, and firm internationalization (cf. Carpenter and Fredrickson, 2001; Sanders and Carpenter, 1998).

Moreover, we add evidence on the relationship between *CEO* characteristics and international diversification. Interestingly, with TMT variables included, the CEO effects disappeared in our empirical model. Prior studies have suggested mixed support for the idea that studying TMT characteristics adds to studying the influence of the CEO (see Finkelstein and Hambrick, 1996; Miller *et al.*, 1998). Our results suggest (cf. Finkelstein and Hambrick, 1996) that the TMT does add to the CEO; in fact, our results suggest an even stronger conclusion: that the CEO title does not matter much beyond being a TMT member (i.e., CEOs are also included in the TMT). However, we should be careful when generalizing this particular result in view of the Dutch governance system in which CEOs are chairpersons of the "Raad van Bestuur" (i.e., the executive board) and act more like "first among equals" than their US counterparts (i.e., CEOs) do.

Finally, no support was found for the two hypotheses about the *level* of education (of the CEO and the TMT). Interestingly, these were the only hypotheses that were exclusively anchored in cognitive complexity theory and *not* also anchored in structural holes theory (i.e., all other hypotheses were anchored in structural holes theory and sometimes in cognitive complexity theory). In addition, this hypothesis assumed that the level of formal education was a valid measure of cognitive ability or complexity. This suggests that either cognitive complexity theory

or a formal education measure is not valid in the context of internationally diversified firms, or both. In fact, prior research by Calori et al. (1994) has provided direct evidence consistent with the idea that executives at internationally diversified firms have more complex cognitive maps than their counterparts at less internationalized firms. This casts additional doubt on "education level" as a measure of cognitive complexity and ability (cf. Hitt and Tyler, 1991). However, more research is needed to make more definitive conclusions.

Obviously, this study has limitations as well. Empirical support from a non-US sample and using panel data in itself add to prior work that has found similar empirical outcomes. However, the empirical results from this study might be predicated on the particular culture in which the firms in our sample were rooted (as in any other study). Future work using data from different cultures would add to our study. Further, our study examined the relationship between CEO and TMT characteristics and a firm's degree of international diversification in order to determine what sort of CEOs and TMTs are needed at highly internationalized firms (as opposed to less internationalized firms). Future studies may examine interesting *contingencies*: the relationship between TMT characteristics and international diversification in turbulent and stable environments (Keck, 1997; Murray, 1989) or low-high interdependence (Michel and Hambrick, 1992) of the components of the firm, for instance, in the context of varying degrees of product diversification (cf. Barkema and Vermeulen, 1998b; Hitt et al., 1997; Tallman and Li, 1996). Carpenter and Fredrickson's 2001 study, which explores how the influence of heterogeneity on international diversification is moderated by uncertainty, is an interesting example in this respect.

More generally, we currently understand very little about what sort of top managers and top teams are needed at the helm of MNCs (i.e., highly complex organizational structures – according to some, internal network in themselves, cf. Hedlund (1994) – with many different factions, regional and divisional units, etc.). There is very little systematic knowledge (theory and evidence) on what sort of managers are needed in this position as compared to the sort of managers needed in firms in early stages of internationalization. The issue of how the demands on the top team – and hence the optimal composition of the TMT – change as firms internationalize over time is extremely interesting, both from a theoretical and from a practical perspective, and we therefore strongly encourage the development of such dynamic theory.

Chapter 4[1]

Does Top Management Team Diversity Promote or Hamper Foreign Expansion?

4.1 Abstract

Prior research has shown that TMT diversity increases technological innovation and entry into new product markets. We extended the argument to the setting of entering new geographic areas. In addition to exploring the cognitive implications of TMT diversity – as prior TMT research has done – we explored when diversity leads to the formation of subgroups within TMTs, which may hamper communication and the propensity to enter new geographic areas. We also developed theory and hypotheses on how these cognitive and social implications change over time, as TMT members continue to interact over the years. The hypotheses were tested using ordinal probit analysis and longitudinal data on 2,159 expansions of twenty-five companies over a period of more than three decades (1966-1998).

[1] This chapter is the result of joint work with Harry Barkema

4.2 Introduction

Companies increasingly operate in changing and dynamic environments, racing against competitors to develop new technologies and to invest in new product markets and new geographic markets. Much strategy research has explored the role of top management teams (TMTs) as drivers of such strategic innovation, in particular, the role of TMT diversity. This research explored the impact on new technology development (Bantel and Jackson, 1989; Wiersema and Bantel, 1992) and entry into new product markets (Boeker, 1997a). We extended this research by exploring how TMT diversity influences the propensity to invest in new geographic areas and to develop from being a domestic firm to becoming a multinational company. This strategic setting is of increasing practical importance, for instance, foreign direct investments grew from $1,871 billion in 1990 to $6,846 billion in 2001 (United Nations, 2002).

TMT researchers have traditionally argued that the diversity of the cognitive structures of TMT members rooted in different experiences (in tenure, education, age, and so on) promotes constructive debate and hence strategic innovation, in the form of technological and bureaucratic innovation, entry into new product markets, and so on (Bantel and Jackson, 1989; Boeker, 1997a; Wiersema and Bantel, 1992; Hambrick *et al.*, 1996). Building on this stream of research, we argued that TMT demographic diversity (which captures cognitive diversity) also increases the likelihood that new investments will be in new geographic areas, i.e., in new foreign countries and regions (such as South-East Asia, Latin America, and Central and Eastern Europe).

However, TMT researchers have traditionally ignored the fact that diversity may also have negative implications (Amason, 1996), for instance, it may lead to the formation of subgroups within teams (Earley and Mosakowski, 2000). Recent theoretical research into small groups suggests that the formation of subgroups or "faultlines" (Lau and Murnighan, 1998) within teams is particularly likely if the subgroups differ in terms of several demographic characteristics at the same time. This may lead to emotional conflict; it may hamper communication within teams (Lau and Murnighan, 1988), and decrease the capacity of teams to innovate strategically. We developed this idea for the context of TMTs' navigating their firms towards new foreign countries and regions and from being domestic firms towards becoming multinational companies.

Does TMT Diversity Promote Foreign Expansion?

Social interaction changes what managers think and feel. Team members interacting over the years as part of their daily operations exchange information and ideas and learn from each other, reducing the cognitive diversity of the team (Katz, 1982). As experiments with small groups suggest, they also get to know each other better, which may erode "faultlines" in teams based on initially perceived surface-level, demographic differences. We developed these ideas further for the context of TMTs and the propensity of their companies to invest in new geographic areas.

Prior research into team processes typically used experiments taking from a couple of hours up to seventeen weeks (the time that MBA students are typically available for experiments). Little is known about the setting that is relevant for strategy researchers: that of real managers interacting over periods of years (an exception is Pelled *et al.*, 1999). We developed our hypotheses for this setting. Hence, consistent with our theory, we tested the hypotheses on longitudinal data on the TMTs of twenty-five internationalizing companies engaged in 2,159 investments over a period of more than three decades (1966-1998). The propensity to enter new foreign countries or even entirely new regions (rather than invest in familiar foreign countries or at home) was modelled using ordered probit analysis. Our measures built on and extended recently developed measures of overlapping team tenure (Carroll and Harrison, 1998) and of faultlines (Lau and Murnighan, 1998).

We believe that this type of research is also relevant from a practical perspective. It is often difficult to influence the social dynamics within TMTs and it may be easier to change the composition of a team (Yu, 2002: 17). Hence, it is useful to know how changes in TMTs in respect of their demographic characteristics – for instance, replacing a 60-year old engineer who joined the team a dozen years ago by a new, 45-year-old manager with an MBA – influence the cognitive diversity and the social dynamics of the team, and the propensity to strategically innovate in terms of entering new geographic areas, and how this changes as TMT members interact over long periods of time (i.e., years rather than weeks or months).

We reviewed, first, TMT research anchored in cognitive theory on how demographic diversity influences strategic innovation; then, research into small groups and "faultlines" using a social lens; and, finally, prior internationalization theory to set the stage for the development of our own theory and hypotheses.

4.3 Theoretical Background

TMT research

Over the past two decades, a number of upper-echelon researchers extended Hambrick and Mason's seminal (1984) work on how TMT demographic characteristics can be used to explain corporate strategy. A key assumption of this research program was that (differences in) demographic characteristics are useful indicators of (differences in) individual experiences, skills, values, cognitive styles, and information sources (Jackson, 1992; Jehn *et al.*, 1999). Much of this research explored how TMT diversity or "heterogeneity" – we use these terms interchangeably – influenced strategic innovation (Finkelstein and Hambrick, 1996; Williams and O'Reilly, 1998). Early empirical work (Bantel and Jackson, 1989; Wiersema and Bantel, 1992) supported the idea that TMT demographic diversity favors the consideration of many alternatives and that it enhances creativity and the likelihood that innovative strategic decisions will be made.

However, later empirical studies showed mixed support. Boeker found that heterogeneous TMTs are more likely to enter new product markets (1997a) and to implement administrative innovation (1997b) than homogenous teams. However, other empirical studies found that TMT tenure diversity decreased technological innovation (O'Reilly *et al.*, 1993); that tenure diversity and functional diversity decreased product innovation (Ancona and Caldwell, 1992); and that more diverse TMTs made less comprehensive evaluations of opportunities and threats (Miller *et al.*, 1998).

Therefore, TMT researchers have begun to "open up the black box" (Lawrence, 1997; Pelled *et al.*, 1999) regarding the strategic implications of TMT diversity (Hambrick *et al.*, 1996; Miller *et al.*, 1998). It has been argued, for instance, that team diversity not only promotes diversity of ideas and increases strategic innovation (as the cognitive lens traditionally used in TMT research implies), but also leads to emotional conflict, which is detrimental (Amason, 1996; Jehn, 1995, 1997; Jehn *et al.*, 1999; Pelled *et al.*, 1999). Apparently, there is a need to separate, both theoretically and empirically, the positive effects of TMT diversity implied by a cognitive lens from the suggested negative (social) effects when seeking to explain how TMT diversity influences strategic innovation.

A Social Lens

Managers, like other human beings, are "social animals," with a tendency to understand situations in terms of groups to which they do or do not belong. Seeking to improve their image of themselves, they create positive images of groups with which they can identify (Tajfel, 1974; Tajfel and Turner, 1979; Turner, 1982) and assign themselves and others to relevant categories (Hogg, 1996: 229). Since demographic characteristics are easily noted, they are particularly likely to shape first impressions and serve as a basis for individuals to categorize themselves and other team members into groups. Indeed, much research has shown that group membership correlates strongly with demographic groups in organizations (Levine and Moreland, 1998). Observable characteristics such as race, gender, age, department membership, education, and tenure are particularly likely to serve as identity attributes, elicit stereotypes, and provide cues for categorization (Harrison *et al.*, 1998; Pelled *et al.*, 1999; Watson *et al.*, 1993).

This process of social categorization may also occur within teams. As individuals identify with demographically similar peers (Byrne, 1971), boundaries may emerge within teams, dividing them into relatively homogenous subgroups and hampering communication. Recent research into teams (Earley and Mosakowski, 2000; Lau and Murnighan, 1998) explored when demographic diversity leads to the formation of subgroups within teams, and how this influences team processes and team performance. Particularly relevant for our study is Lau and Murnighan's (1998) theoretical paper on small groups. They emphasize the importance of "faultlines" within teams, which divide teams into subgroups based on one or more demographic attributes. Examples are gender faultlines dividing teams into male and female subgroups, and faultlines dividing teams into subgroups of lawyers and engineers. The formation of subgroups is particularly likely in "strong faultline settings," when several demographic attributes become aligned in the same way (Lau and Murnighan, 1998). An example is a team consisting of a subgroup of young female lawyers and a subgroup of older male engineers. In such settings, emotional conflict is particularly likely, hindering communication and the exchange of ideas within the team (Jehn, 1997; Jehn *et al*, 1999), and novel, frame-breaking ideas are the first to suffer (Finkelstein and Hambrick, 1996).

We develop these ideas further in our theory and hypotheses section.

Internationalizing Firms

Much research over the past decades (e.g., Aharoni, 1966; Barkema *et al.*, 1996; Johanson and Vahlne, 1977) explored how firms expand beyond their national borders into neighboring countries and countries further away. Investments in foreign countries endow a firm with experience of their cultures and their institutional and competitive settings, making additional investments in these countries more routine and a more incremental decision (Delios and Beamish, 2001; Eriksson, *et al.*, 1997; Li, 1995). More innovative, from a strategic perspective, are first-time investments in new foreign countries and, particularly, in new "cultural blocks," such as South East Asia, Latin America, and Latin Europe (Barkema *et al.*, 1996; Delios and Henisz, 2003). Cultural blocks have been defined as relatively homogenous groups of countries with little within-variance in terms of culture compared with the differences between cultural blocks (Ronen and Shenkar, 1985). Hence, a first-time investment in a new cultural block means investing in a cultural and institutional setting that differs considerably from settings that the firm previously invested in, making the investment particularly novel and "frame-breaking" from a strategic perspective.

Recently, Carpenter and Fredrickson (2001) found some support for the idea that highly internationalized companies are run by demographically diverse TMTs and that firms at lower levels of internationalization tend to be led by more homogenous teams. However, little is known about the type of TMTs that tend to invest in new geographic areas rather in familiar domains (Carpenter and Frederickson, 2001), what the cognitive and social implications of TMT demographic diversity are in this strategic context, and how these implications change as team members interact over long periods of time (i.e., years).

4.4 Theory and Hypotheses

The Dependent Variable

Hambrick *et al.* (1996: 664) argued that entry into new geographic areas is a particularly appropriate setting in which to examine the influence of TMT diversity, because this decision is likely to involve the whole TMT, in contrast to more incremental and conventional decisions such as expanding the firm's sales force, which may be made by a subset of the team. Some studies

(e.g., Aharoni, 1966; Johanson and Vahlne, 1977) have shown that new geographic areas are sometimes entered using sales agents. Entry through direct investments in new geographic areas, which will likely involve the whole top team, was, therefore, a particularly appropriate setting to explore in our study. Hence, we adapted Hambrick et al.'s suggestion by exploring how TMT diversity influences the likelihood of new *investments* being made in new geographic areas rather than in familiar geographic domains.

As discussed above, prior research into internationalizing companies implies the following definition and measurement of the geographic novelty of new investments. At increasing levels of novelty of the geographic location, a new investment can be in 1) The firm´s home country, where it has invested since it was founded and where it knows the culture, institutional and competitive setting, suppliers, and clients best. 2) A foreign country where it has invested before and developed routines for operating locally, making additional investments in the country more incremental and routine (Barkema *et al.*, 1996; Delios and Beamish, 2001; Johanson and Vahlne, 1977; Li, 1995). 3) A foreign country in a cultural block where it has invested before (e.g., South-East Asia, Latin America, or Latin Europe; Ronen and Shenkar, 1985) and already developed routines in a similar culture (Barkema *et al.*, 1996; Delios and Henisz, 2003). 4) A new cultural block (where the firm has not invested before). We used this ordinal ranking of the novelty of geographic locations of new investments as the dependent variable in our theory and empirical analyses.[1]

A Cognitive Lens

Demographically homogenous TMTs are less likely to break the mold and make novel strategic decisions (Bantel and Jackson, 1989; Wiersema and Bantel, 1992). Group members are less likely to criticize each other´s ideas and are too concerned about maintaining unanimity. As a result, TMTs may overlook important details, succumb to inertia and "groupthink" (Hambrick and Mason, 1984; Jehn, 1995), and reinforce rather than break familiar investment patterns (Finkelstein and Hambrick, 1996). Alternatively, demographic diversity implies tapping into a diversity of preferences and beliefs, business and life experiences, skills, and information networks (Jackson, 1992). This leads to a wider range of strategic options to be considered and increases the novelty of strategic decisions (Bantel and Jackson, 1989; Boeker, 1997a; Levine and Moreland, 1998; Wiersema and Bantel, 1992).

Part of the mechanism is that diversity in experiences, skills, views, preferences, and information within TMTs stimulates task-related, constructive criticism and debate (Jehn, 1997; Jehn *et al.*, 1999; Simons *et al.*, 1999). As a result, team members become aware of more issues, of more ways of viewing the same issue, and of more alternative courses of action. Hence, task conflicts encourage groups to develop new ideas and approaches (Amason, 1996; Jehn, 1995), which increases the likelihood of strategic innovation and decreases the likelihood that strategic decisions will be conventional, limited in scope, and in accordance with familiar patterns (Hambrick *et al.*, 1996). The urge to delve more deeply into issues, combined with the urge to resolve debate, also encourages TMTs to collect additional data from outsiders (Ancona and Caldwell, 1992; Miller *et al.*, 1998), for instance, from strategic analysts within the firm reviewing potentially attractive markets world-wide, or from external consultants whose experiences, skills, beliefs, and networks do not necessarily coincide with those of the focal firm. This further increases the likelihood of investing in countries or regions where the firm has not invested before.

Task-related conflicts are particularly likely if the heterogeneity in experiences, skills, values, and beliefs directly concerns the task (Pelled *et al.*, 1999), in our case, the evaluation of investment opportunities. TMT *tenure diversity* implies heterogeneity in experiences, skills, views, and preferences concerning this task (cf. Pelled *et al.*, 1999; Simons *et al.*, 1999). For instance, a person who joined the team a dozen years ago (and probably gained experience of foreign expansions as a team member) may have different experiences, skills, views, and ways of understanding expansions than a person who joined recently. Likewise, *diversity in type of education* - being an engineer, lawyer, or having an MBA - also implies different experiences, skills, views, and ways of understanding and evaluating (foreign) expansions. Hence, both types of TMT heterogeneity may stimulate constructive, task-related debate and entry into novel geographic areas.[2]

H1a: TMT tenure diversity increases the novelty of the geographic location of investments
H1b: TMT diversity in type of education increases the novelty of the geographic location of investments

A Social Lens

As mentioned above, faultlines are particularly likely if several demographic attributes align within teams implying the same divide (Erickson, 1988). Divides within teams that depend on only one demographic attribute may emerge only in specific situations, for instance, based on professional background when specific professional issues are being discussed, or based on age or gender in the context of more general social issues. As a result, the team may split differently each time, depending on the situation, and at most weak faultlines are likely (Lau and Murnighan, 1998). In contrast, in "strong faultline settings," where several demographic attributes align to divide teams into subgroups, subgroups serve as peers on an entire range of issues while others consistently belong to other subgroups, which may lead to the formation of stable subgroups and deep faults (Earley and Mosakowski, 2000; Moscovici and Doise, 1996). This may occur, for instance, in a TMT with a subgroup of older managers with at most secondary schooling who have served on the team for many years and a subgroup of young managers with MBAs who joined recently.

Emotional conflicts may consistently flare up along these faultlines as team members are negatively disposed towards the ideas of other subgroups even before they are expressed (Jehn, 1997; Jehn *et al.*, 1999), revealing inter-group differences and prejudices and leading to interpersonal clashes, anger, frustration, and other negative feelings (Amason, 1996; Earley and Mosakowski, 2000; Pelled *et al.*, 1999). This damages the exchange of ideas and reduces the willingness to understand and discuss new ideas and information provided by other subgroups (Jehn, 1997; Pelled *et al.*, 1999); and novel, frame-breaking ideas and strategic initiatives are the most likely to suffer (Finkelstein and Hambrick, 1996).

As a result, new strategic initiatives that might have been welcomed by other subgroups may never reach the TMT as one or a few executives quietly address these initiatives behind the scenes (Miller *et al.*, 1998). A divided TMT may also imply more room for subsidiary managers abroad or at home to push their own initiatives for local expansion and empire building (Birkinshaw, 1997), further promoting incremental and conservative investments (i.e., in countries where the firm invested before) rather than investments in new geographic areas. In sum, we expected that strong faultline settings would imply lower levels of strategic innovation and decrease the likelihood of expansions into new geographic areas rather than in familiar domains. Formally,

H2: Strong faultline settings decrease the novelty of the geographic location of investments

TMT Diversity over Time

A Cognitive lens. Over time, the cognitive diversity of the TMT diminishes through the continued interaction of the same members, which in turn influences strategic innovation through entry into new geographic areas. New members interacting with senior TMT members may increasingly assimilate the skills, knowledge, values, views, and expected behaviors of the team (Erickson, 1988; Van Maanen and Schein, 1979). Vice versa, senior managers may adopt the new ideas of members who joined the team later through interaction over time as their tenure increasingly overlaps. While experiments with MBA students (lasting from a couple of hours to, at most, 17 weeks, the time students are typically available for experiments) have shown that newly-formed diverse groups may benefit from the first weeks or even months of common experience – as a common language, trust, and routines enabling the exchange of ideas develop (Gruenfeld *et al.*, 1996; Watson *et al.*, 1993) – research into the social interaction of the same members over long periods of time (e.g., eleven years in the study by Katz, 1982) suggests that such interaction eventually reduces the diversity of preferences and ideas of teams, reducing constructive debate and strategic innovation (Finkelstein and Hambrick, 1996). While team members who have interacted over long periods of time may be more successful in avoiding or resolving conflict, they are also less likely to experience the knowledge asymmetries from which productive task conflicts arise (Gruenfeld *et al.*, 1996: 13).

Part of the mechanism is that, as team members learn the views of fellow team members over time, they increasingly anticipate criticism of an idea even before it is expressed and either frame the idea or adapt it in a way that makes it acceptable, or avoid expressing the idea altogether (Pelled *et al.*, 1999: 9). This reduces intra-group communication and debate, and consequently the capacity of the team to learn new ideas from each other (Katz, 1982: 85).

As a result, team members develop a common understanding of the tasks of the TMT and how to handle them (Katz, 1982). Creativity and the urge to generate novel iniatives and ideas are reduced as team members increasingly focus on consensus-building rather than on entertaining innovative ideas (Jehn, 1995, 1997). While new additions to the team bring in fresh perspectives

and approaches, the interaction over time of the same members reduces the urge to launch novel initiatives and debates, to delve more deeply into issues, to initiate constructive task-related debate, and to ask advice from outsiders. Ultimately, it may lead to "groupthink", rigidity, and strategic inertia (Katz, 1982) as heterogeneity in the easily observable demographic characteristics of the TMT decreasingly reflects diversity of preferences, values, and beliefs (Harrison *et al.*, 1998; Pelled *et al.*, 1999), reducing task conflict, and the likelihood of strategic innovation and of entry into novel geographic areas.

In sum, the continued interaction of TMT members over time (i.e., years) as their tenure increasingly overlaps diminishes the (positive) impact of TMT demographic diversity on the novelty of the geographic location of investments. Formally,

> *H3: Overlapping team tenure negatively moderates the effect of TMT demographic diversity on the novelty of the geographic location of investments.*

A social lens. Over time, as team members get to know each other better, perceived social categories within a TMT based on demographic attributes may eventually become blurred (Chatman and Flynn, 2001; Harrison *et al.*, 1998; Pelled *et al.*, 1999). Demographic characteristics which initially served as the basis for (self-) categorization and division into subgroups become less salient as TMT members continue to interact and gain more personal information about each other, reducing stereotyping and emotional conflict along faultlines in teams (Chatman and Flynn, 2001). Initially, demographically different team members may be hesitant to listen to each other and share ideas and cooperate because they categorize each other as out-group members. However, as surface-level demographic characteristics become less salient over time, demographically dissimilar group members begin to re-categorize themselves and others as fellow in-group members. The boundaries of the "in" category and the "out" category change and individuals with whom interaction is frequent gradually become accepted as full group members (Cialdini and Trost, 1998; Van Maanen and Schein, 1979). As a result, the barriers to sharing and discussing novel ideas and initiatives gradually disappear (Chatman and Flynn, 2001; Harrison *et al.*, 1998; Watson *et al.*, 1993).

If new members join the TMT, they may initially form new subgroups with demographically similar team members and, at least temporarily, new faultlines may be created.

However, if team members continue to interact over time as their tenure increasingly overlaps, faultlines and emotional conflicts along these lines gradually disappear, removing barriers to the exchange of ideas and strategic innovation and increasing the probability of entry into new geographic areas. Formally,

> *H4: Overlapping tenure of TMT members positively moderates the effect of faultlines on the novelty of the geographic location of investments.*

4.5 Methods

Sample

Our sample contained data on the expansions of twenty-five large non-financial Dutch firms from 1966 to1998. These firms were active in a wide variety of industries: chemical and pharmaceutical products, paper and packaging, food products, brewing, retailing, publishing and printing, trade, tank storage, and many other industries. The firms were selected in the following way: we selected all non-financial firms listed on the Amsterdam Stock Exchange in 1993.[3] No data were gathered about the four largest firms (Royal Dutch Shell, Unilever, Philips, Akzo) since they differed considerably from the other firms in terms of breadth of activities, international experience, scope, and size. Most firms in our sample began to increase their foreign direct investments in the late 1960s or later, starting almost from scratch. By the end of our window of analysis (1966-1998), they had invested in 93 countries (corresponding with nine cultural blocks; Ronen and Shenkar, 1985). Their average number of employees was 13,907 (median: 10,327) and their average sales were $ 2,566 million in 1993 (median: $ 1,898 million).

The database contained information on all direct investments – both domestic and foreign – reported in the annual reports of these firms between 1966 and 1998. These annual reports also contained data on the TMTs of these firms. An attractive feature of the Dutch setting is that firms have clearly defined TMTs (called "Raad van Bestuur"). These TMTs represent all main functions (marketing, finance and accounting, production, etc.) and are the main governing body of the firm for strategic decisions (the largest investments need to be approved by the Board of Directors). The Raad van Bestuur meets regularly (for instance, once a week) to evaluate and decide on major strategic issues, with the Chairman of the Raad van Bestuur acting as a *primus*

inter pares. Hence, no arbitrary choices needed to be made in our study about who was a member of the TMT and who was not (a problem which plagued studies in other institutional settings, cf. Wiersema and Bantel, 1992). Another characteristic of our sample was that the TMTs of these companies were almost completely homogenous in terms of gender (i.e., male), race (Caucasian), and nationality (Dutch). Data on tenure and educational type (engineer, lawyer, etc.) of TMT members were also obtained from annual reports. This led to a sample of 2,159 expansions (i.e., 721 domestic and 1,438 foreign investments).

Analysis

Since our dependent variable was ordinal – four categories of novelty of the geographic locations of new investments – we tested our hypotheses using ordered probit analysis, a conventional method of analysis when the dependent variable is measured at an ordinal level. Ordered probit models are used to estimate the continuous (latent) dependent variable y_i^* reflecting, in this case, the unobserved novelty of the expansion:

$$y_i^* = \mathbf{x}_i'\boldsymbol{\beta} + \varepsilon_i$$

where the vector $\mathbf{x}_i$ contains the values of the explanatory variables for observation i, and ε_i is a normally distributed error term. The model is also used to estimate the cut-off points m_j which define the range of values of y_i^* corresponding to a specific category of the observed ordinal variable, in this case,

$$y_i = 1 \text{ if } y_i^* < m_1,$$
$$y_i = 2 \text{ if } m_1 \leq y_i^* < m_2,$$
$$y_i = 3 \text{ if } m_2 \leq y_i^* < m_3,$$
$$y_i = 4 \text{ if } y_i^* \geq m_3;$$

where y_i represents the observed (ordinal) dependent variable. The probability of an expansion occurring, for instance, in a new country in a familiar cultural block (category 3) is defined as

$$P(y_i=3) = \Phi(m_3-\mathbf{x}_i'\boldsymbol{\beta}) - \Phi(m_2-\mathbf{x}_i'\boldsymbol{\beta})$$

The parameters were estimated using a modified maximum-likelihood procedure, adjusted for within-group dependence to account for firm-specific effects (the "cluster" command line in STATA; see Carpenter, 2002, for a recent application in a similar context). The assumptions of this procedure correspond to a random-effects specification in a linear model (checks for the robustness of this assumption were reported in the *Sensitivity Analysis* section). The adjustment for the clustering of firms takes the following form (StataCorp, 2001: 242):

$$\hat{V}(\hat{\boldsymbol{\beta}}) = \mathbf{D}\left[\frac{n_c}{n_c - 1}\sum_{j=1}^{n_c}\left(\sum_{i \in C_j}\mathbf{u}_i\right)'\left(\sum_{i \in C_j}\mathbf{u}_i\right)\right]\mathbf{D}$$

where C_j contains the indices of the observations belonging to the jth cluster (firm) for j=1,2,...n_c with n_c being the total number of clusters (firms). **D** is the negative of the inverse of the Hessian (i.e., the conventional covariance matrix estimate in maximum likelihood), and $\mathbf{u}_i$ are the score vectors, $\mathbf{u}_i = S(\hat{\boldsymbol{\beta}}; y_i, \mathbf{x}_i) = \partial l_i / \partial \hat{\boldsymbol{\beta}}$.

As is common in studies of interaction effects, we centered all variables involved in interactions (Jaccard *et al.*, 1990).

Variables

The novelty of the geographic location of investments. This rank-ordered variable – the dependent variable in our study – had four categories, with value 1 = if the investment was in the home country (i.e., the Netherlands); 2 = in a foreign country where the firm had invested before; 3 = in a new country in a familiar cultural block (Ronen and Shenkar, 1985) where the firm had invested before; and 4 = in a new cultural block. Hence, a positive slope coefficient of an explanatory variable implied a positive effect on the novelty of the geographic location of investments. The distribution of observations for each level of the dependent variable was 721, 965, 324, and 149, respectively.

TMT tenure diversity. TMT tenure is the number of years of membership of the TMT. *Tenure diversity* was computed in the conventional way using the coefficient of variation (Bantel and Jackson, 1989; Wiersema and Bantel, 1992).

TMT diversity in type of education. The diversity in the type of education was also computed in the conventional fashion (cf. Wiersema and Bantel, 1992). In the Dutch system, "Drs." is the title for university graduates in Economics and Social Sciences (including MBAs); "Mr." stands for a university degree in Law; "Ir." for a university degree in Engineering. Managers without a university degree had typically completed a vocational training program; they were categorized as "no degree."

Overlapping tenure within the TMT. We used the measure of *common historical experience* ("TLAP") proposed by Carroll and Harrison (1998) to capture the overlap in tenure of team members as a proxy of their social interaction over time. This variable averaged pair-wise overlap in tenure for all possible pairs in the TMT:

$$TLAP = 1/N \sum_{i \neq j} \min(u_i, u_j)$$

where N is the total number of pair-wise comparisons. To capture the diminishing effects of interaction between team members over time (Carroll and Harrison, 1998; Cialdini and Trost, 1998), we used the logarithmic transformation of TLAP in our analysis. [4]

Faultlines. The operationalization of faultlines was based on Lau and Murnighan (1998). The most likely demographic attributes favoring subdivisions within teams are those which are "impermeable" (Pelled *et al.*, 1999), i.e., where individuals cannot move in or out at will. Examples are gender, race, nationality, age, tenure, and education (type and level). Although age and tenure increase with time, individuals do not have the choice of going back to lower levels of tenure or age, which makes these categories highly impermeable (Pelled *et al.*, 1999). Our measure of faultlines was, therefore, based on the age, tenure, and education (type and level) of team members. Data on the age of TMT members were obtained from annual reports, "Who is Who," by phoning and faxing companies, and from other sources. The level of education was operationalized (since the Dutch system of higher education does not allow a classification in terms of BA, MBA, and so on, cf. Boeker, 1997b; Wiersema and Bantel, 1992) using a three-level categorical variable with value = 0 for no university degree, 1 = for a university degree, and 2 = for a doctorate.[5]

Logically, the identification of strong faultline settings required two steps, first, to determine whether or not faultline situations existed in teams, and second, to distinguish between

weak and strong faultline settings (Lau and Murnighan, 1998). Consistent with Lau and Murnighan's recommendations, we followed a two-step approach with an objective procedure in the first step (i.e., Latent Cluster Analysis, which used both ratio- and nominal-scale data) to determine whether or not faultline situations existed in teams (i.e., whether subgroups could be identified or not). In the second step, we exactly applied Lau and Murnighan's (1998) qualitative procedure to dinstinguish between weak and strong faultlines. A more detailed description of the procedure is given in Appendix A.

Control variables

TMT Size was measured using the number of members of the TMT (including the Chair). These data, as well as data on other control variables, were also available from annual reports.

Firm Size. Entry decisions may also be influenced by the size of the firm, since bigger firms are more likely to have the resources and expertise to successfully enter foreign markets. Firm size may also correlate with team size (as bigger firms tend to have larger TMTs), and possibly with other top-team variables as well. Hence, we controlled for firm size, which was measured using the logarithm of the number of employees.

Firm profitability and the implied financial slack may also influence entry decisions: cash-strapped firms may be less likely to accept the risks of entering foreign, and especially, unfamiliar markets. We included return on assets in our models to control for these effects.

International experience. We also controlled for the firm's international experience, measured using the number of prior foreign expansions. International experience may lead to top managers having richer and more accurate cognitive maps of foreign conditions, which may reduce the novelty of foreign entries for managers of fully-fledged multinational corporations in comparison with the managers of companies which had less international experience (Johanson and Vahlne, 1977; Barkema and Vermeulen, 1998).

Finally, we included **year dummies** in our models to control for time-specific effects. (Firm effects were controlled for using appropriate adjustments of standard errors). Table 1 presents the descriptive statistics and correlation coefficients of the variables in our study.

Table 1: Descriptive Statistics and Correlations

	Mean	Standard deviation	1	2	3	4	5	6	7	8	9
Log employees	9.227	0.858	1								
ROA	0.073	0.088	-0.008	1							
International experience	38.586	35.402	0.325	0.2	1						
Team size	4.652	1.944	0.122	0.02	-0.011	1					
Tenure diversity	0.673	0.279	0.034	0.022	0.171	0.07	1				
Educational diversity	0.463	0.206	0.089	-0.069	-0.036	-0.28	0.107	1			
Log TLAP	1.449	0.522	0.257	-0.009	0.067	0.003	-0.437	0.001	1		
Weak faultline	0.277	0.448	0.039	-0.101	-0.021	0.35	-0.021	0.118	0.052	1	
Strong faultline	0.065	0.246	-0.050	-0.077	-0.190	0.051	0.039	0.030	-0.048	-0.163	1

4.6. Results

The estimation results are presented in Table 2. The dependent variable captured the novelty of the geographic location of investments. Hence, a positive slope coefficient means that a variable increases the novelty of location decisions. The likelihood ratio test indicated a significant improvement of the model fit owing to the inclusion of interaction terms ($p<0.01$ going from Model I to Model II). The following discussion is based on the complete (and fully-specified) Model II.

The first two hypotheses predicted positive effects of TMT tenure diversity and type of education diversity, respectively. We found support for H1a ($p<.05$), but not for H1b. Since all variables involved in interactions were centered, this means that, on average (i.e., at average values of TLAP), tenure diversity positively influenced the likelihood of entering new markets. H2, about the detrimental effect of strong faultline settings on the likelihood of entering novel geographic areas, was also supported ($p <0.1$ at average values of log TLAP). These model estimates imply, for instance,that investments by a diverse TMT (two standard deviations above the mean in terms of tenure diversity, no faultlines) had a 3% higher probability of being in a new cultural block and a 9% lower probability of being at home than investments by a moderately diverse TMT (average tenure diversity) with a strong faultline situation.

H3 was also corroborated: the interaction of overlapping team tenure (TLAP, our proxy of social interaction between team members over time) with the effect of TMT tenure diversity showed a significant, negative relationship with the dependent variable ($p<0.05$), consistent with the idea that continued interaction over time negatively moderates the beneficial effect of tenure diversity on strategic novelty. Following Jaccard *et al.* (1990), we also calculated the values of the slope coefficient of tenure diversity and the corresponding standard errors at several levels of tenure overlap. The positive slope coefficient remained significant until 3.25 years of tenure overlap (i.e., close to the mean of this variable). This is consistent with the idea that, on average, cognitive diversity (owing to tenure diversity) significantly decreases over the first 3.25 years of social interaction; after that, no significant effect was measured.

Table 2: Coefficients and *t*-statistics for Ordered Probit model

Dependent variable: Novelty of FDI Location Decisions[2]

Variable[3]	Model I[4]	Model II
Log employees	-0.058	-0.059
ROA	0.494	0.580
Log international experience	0.277***	0.281***
Log team size	-0.018	0.003
%with degree	-0.282	-0.307
Log tenure diversity	0.027	0.045*
Log educational diversity	-0.013	-0.015
Log TLAP	-0.022	-0.073
Weak faultline	-0.015	-0.025
Strong faultline	-0.245*	-0.215†
Log tenure diversity * log TLAP		-0.097**
Log educational diversity * log TLAP		-0.004
Weak faultline * log TLAP		0.158
Strong faultline * log TLAP		0.458*
N	2159	2159
Log likelihood	-2489.436	-2483.096
LR		12.68**

[2] Home country = 1 (N=721); familiar foreign country = 2 (N=965); new country in a familiar block = 3 (N=324); new cultural block = 4 (N=149).

[3] Year dummies not shown.

[4] **p<0.01; *p<0.05; † p<0.10 (one-tailed if hypothesized, two-tailed if not).

H4 was corroborated as well: tenure overlap (TLAP) negatively moderated the (detrimental) effect implied by strong faultline settings. In other words, continued interaction between TMT members over time apparently eroded faultlines and their negative influence on the propensity to expand into new geographic areas. Additional calculations (cf. Jaccard *et al.*, 1990) showed a significantly decreasing (detrimental) effect of strong faultline settings over the first 3.75 years of tenure overlap; no significant effect was measured for later periods. This suggests that the time required to erode faultlines is of the same order of magnitude as the time that it takes to erode cognitive diversity owing to tenure diversity.

Finally, most control variables had statistically insignificant relationships with the dependent variable; only international experience had a significant (positive) effect.

Sensitivity analysis. Our theory implied a rank-ordering of the (four) categories of the dependent variable. We nevertheless explored the validity of this assumption by also estimating a multinominal model, which did not impose a rank-order restriction (Boroah, 2002; StataCorp, 2001). The estimates from the multinomial model corroborated the rank-order assumption. The pattern of the (relative order of the) estimated effects of the variables on the separate categories (i.e., new cultural blocks; new foreign countries in familiar blocks; familiar foreign countries; investments at home as the omitted category) was similar to the pattern of results from the ordered-probit model and to the pattern hypothesized.

We also did some sensitivity analysis regarding our measure of faultlines. In our main analysis, we exactly applied Lau and Murnighan's (subjective) classification for the second step of the classification, to distinguish between strong and weak faultlines. To test for the robustness of this (subjective) classification, we conducted an alternative fully quantitative test based on k-means cluster analysis and multivariate analysis of variance.[6] In the first step, the strongest intra-team split (i.e., the most likely faultline) was identified using iterative k-means cluster analysis. (We used ClustanGraphics 5.25, which allows continuous and nominal attributes to be combined in calculating distances between subjects.) After potential subgroups were identified, we used the associated measure to compare the total (multivariate) variance of the team with the variance within subgroups. High values of this measure (i.e., high total-to-within ratios) indicated better-separated subgroups and stronger faultlines, while lower values indicated weaker faultlines. We

replicated the regression analysis, replacing "strong faultlines settings" and "weak faultlines settings" by the (one) continuous measure and observed a similar pattern of support.

Finally, we did some additional tests of the validity of the random-effects specification in our study. Theoretically, we could not exclude the possibility of this model yielding inconsistent estimates, for instance, if the unobserved propensity to enter new markets (i.e., firm effect) correlated with observed characteristics (cf. Hsiao, 1986). Hence, on theoretical grounds alone, we could not exclude the possibility of variables such as international experience and firm size correlating with the unobserved effect. Therefore, as an additional test, we parametrized this relationship by entering firm averages of international experience, firm size, and other explanatory variables as additional variables. This specification is often referred to as a quasi-fixed effects model, which is consistent under the same set of assumptions as fixed effects (Hsiao, 1986). The estimated coefficients (capturing our hypotheses) were similar to those reported in Table 2.

4.7 Discussion

A fundamental issue in management research is the ability of organizations to renew themselves and to move beyond familiar territory. The issue is also important from a practical perspective as firms increasingly compete with other firms to develop new technologies and products and to enter new countries and regions first (Barkema *et al.*, 2002; Brown and Eisenhardt, 1997; Hitt *et al.*, 1998). There is an increasing interest in how TMT diversity influences such strategic innovation (Chatman and Flynn, 2001; Earley and Mosakowski, 2001). Researchers in the upper-echelon tradition have traditionally argued that demographic diversity in TMTs enhances creativity and the likelihood of strategic innovation, for instance, in the context of technological and bureaucratic innovation and of entry into new product markets (Bantel and Jackson, 1989; Boeker, 1997a; Wiersema and Bantel, 1992). In this study, we extended this argument to the setting of entry into new geographic areas. Consistent with predictions, we found that TMT tenure diversity increased the likelihood of investing in new geographic domains; no support was found regarding TMT educational diversity.

We also extended upper-echelon research in other ways, inspired by previous research showing negative effects of TMT diversity (Ancona and Caldwell, 1992; O'Reilly *et al.*, 1993) and by the argument that TMT diversity not only has positive (cognitive) implications, but also has negative (social) implications (Lawrence, 1997; Pelled *et al.*, 1999; Hambrick *et al.*, 1996; Miller *et al.*, 1998). We built on recent theoretical work on small groups (Lau and Murnighan, 1998) in which it was explored under which conditions demographic diversity leads to the formation of subgroups in teams. This is particularly likely in strong faultline settings, where several demographic attributes align to divide subgroups into teams, leading to emotional conflict along faultlines and hampering team performance (Lau and Murnighan, 1998). Such faultlines also decrease the exchange of information and ideas in teams, with new ideas and strategic initiatives being particularly likely to suffer (Finkelstein and Hambrick, 1996), decreasing strategic innovation. We developed these ideas further for the setting of TMTs and the propensity of their companies to enter new geographic areas. The empirical support for the theory remained when we used a fully quantitative measure of faultline settings instead of our main measure building on Lau and Murnighan's original measure (which contained some subjective elements).

Another extension of upper-echelon research was that we explored how social interaction changes TMT diversity over time. Experiments with diverse teams have shown that, in the first weeks or months, social interaction may build trust and facilitate interaction as individuals get to know each other better (e.g., Watson *et al.*, 1993). However, interaction among the same team members over periods of time, such as (many) years, eventually reduces cognitive diversity and leads to inertia, rigidity, and "groupthink," decreasing the likelihood that strategic actions will be innovative and "frame-breaking" rather than incremental and conventional in scope. This theory was corroborated in the context of internationalizing firms, using new measures of social interaction (i.e., of overlapping team tenure, cf., Carroll and Harrison, 1998) and data on real managers over a period of more than three decades. Our evidence suggested that social interaction between TMT members decreased their cognitive diversity over the first 3.25 years of overlapping tenure.

While - as mentioned above - experiments (with MBA students) showed that social interaction may build trust and improve communication within diverse teams during the first weeks or months, these (beneficial) processes may be more difficult and protracted in strong faultline settings where several demographic attributes align to divide teams into subgroups,

leading to emotional conflict (Lau and Murnighan, 1998). We argued that, even in such settings, social interaction among the same team members over a period of years as part of their daily operations eventually reduces the negative (social) effects as team members get to know each other better, improving the exchange of information and ideas within the TMT, and increasing the likelihood of entry into new geographic areas. Consistent with predictions, we found that the negative implications of strong faultline settings decreased over the first 3.75 years of social interaction among team members. However, more theoretical and empirical research is needed into the long-term effects of social interaction on managers in faultline settings.

In general, the results of our study, in which data on real managers over a window of analysis of three decades was used, corroborated earlier suggestions (Lawrence, 1997; Pelled *et al.*, 1999; Hambrick *et al.*, 1996; Miller *et al.*, 1998) that it is important to separately model, both conceptually and empirically, the cognitive and social implications of TMT diversity, and how these develop over time owing to social interaction within teams.

Limitations and suggestions for further research. This study also has limitations. First, although diversity in tenure and education proved to be useful measures of cognitive diversity in earlier research (Hambrick *et al.*, 1996; Wiersema and Bantel, 1992), other sources of diversity – such as international experience – may also be important for the making of strategic international decisions (Sambharya, 1996). Furthermore, the TMTs in our sample – like TMTs in most or all other European countries and perhaps most other countries in the world – showed little diversity in nationality, gender, and race (although this appears to be changing slowly). In this study, we explored a subset of potentially relevant demographic attributes. We found that cognitive diversity and strong faultline settings (as captured by these demographic attributes) influenced strategic innovation. It would be interesting to extend this research to settings that have significant variation in nationality, gender, and race, with more cognitive diversity and also with more potential for strong faultline settings, where the issue might be even more relevant.

Second, investments can be routine in terms of the cultural environment, but novel in the technological sense, and vice versa. Future research may extend our work by investigating geographic and technological innovation simultaneously. Finally, although strategic innovation is an important organizational outcome (Bantel and Jackson, 1989; Hitt *et al.*, 1997), future research

could extend our work by exploring when firms innovate *successfully*, i.e., by examining performance; we would welcome such extensions.

Footnotes

[1] Our conceptualization of strategic novelty is consistent with behavioral theory (Cyert and March, 1963; March and Simon, 1958) – like the above-mentioned internationalization process research (starting with Johanson and Valhne, 1977) – which suggests that most organizational adaptation and change occurs in the vicinity of current practices. This is similar to Boeker (1997a), who conceptualized investment in familiar product markets as routine moves and entries into new product markets as strategic innovation; Greve (1998) used a comparable operationalization. In the geographic sense, additional investments at home or in familiar countries are routine moves; entries into new countries or even new cultural blocks (Ronen and Shenkar, 1985) imply moving beyond familiar cultural and institutional settings.

[2] Rather than, for instance, diversity in demographic characteristics such as race, gender, and age, which form the context of more general social relationships (Jackson, 1992; Pelled *et al.*, 1999; Simons *et al.*, 1999). Then, differences in experiences, values, beliefs, and so on are less relevant for the task at hand (i.e., evaluating investment opportunities) and may lead to stereotyping and emotional conflict rather than to debate about the task (Jehn, 1997; Pelled *et al.*, 1999).

[3] The firms on the Amsterdam Stock Exchange were divided into two segments – "main funds," which are frequently traded - and less-traded funds, which are smaller firms that are infrequently traded. The first segment contained about 35 firms, the second, around 230 firms. We selected our firms from the main funds segment.

[4] The above formulation implies a small correction of the original specification in Carroll and Harrison (1998); correspondence with these authors supported the idea of a typing error in the original article.

[5] We did not use "years of schooling" as derived from titles (cf. Wiersema and Bantel, 1992) because the underlying data structure would be rank-ordered (with three levels) anyway, and any transformation resulting in "years of schooling" would suggest more precision than was actually present.

[6] The advantage of this alternative test was that it did not require qualitative judgment at all. The disadvantage was that it did not treat weak faultline settings, for which our theory did not make predictions, as a separate category, which implies a less valid measure of "strong faultline settings" and a less valid test of our theory.

Chapter 5[1]

Unpacking Organizational Learning: Top Management Teams in Internationalizing Firms

5.1 Abstract

Prior research has explored the strategic consequences of a wide variety of individual characteristics of TMTs, as captured by diversity measures, for instance, in tenure. The present study does not focus on these proxies, but instead focuses on *the shared experience of team members during their tenure*. Shared experiences are experiences - in the context of this paper: with international expansion events - while executives jointly served on the team. We developed theory and hypotheses on how joint experience with non-routine strategic events leads to acquisition of knowledge by individuals and organizations, leading to strategic innovation and superior performance of foreign ventures. The study also explored the moderating role of temporal context -- and the consequences of demographic subgroups on TMTs. The hypotheses were tested using event history analysis and longitudinal data on foreign expansions of twenty-five companies over a period of more than three decades (1966-1998).

[1] This chapter is the result of joint work with Harry Barkema

5.2 Introduction

Prior studies have either explored learning at the individual or at the organizational level (i.e., organizational learning). For instance, the latter type of study assumes that organizations increase their absorptive capacity as they observe, integrate, and put to commercial use experiences from their environment (Cyert and March, 1963; Cohen and Levinthal, 1990). This view also has been applied in empirical studies which assume that firms learn from their experience, for instance, in the context of chains or when internationalizing (Ingram and Baum, 1997, etc.). In fact, there has been a long debate on the relationship between learning at the individual level and at the organizational level; on when (i.e., under which conditions) and how organizational learning takes place (Huber, 1991) and whether organizational level (beyond individuals) indeed exists.

This study aims to bridge that gap by providing new theory and evidence on when and how organizations learn as a function of individual and team characteristics, where we focus on the firm's top management team (TMT). There has been a rich tradition of TMT research exploring strategic consequences of a wide variety of individual characteristics of team members, as captured by diversity measures (Wiersema and Bantel, 1992; Pitcher and Smith, 2001), for instance, in tenure. The present study does not focus on these proxies, but instead *focuses on the shared experience of team members during their tenure*. Shared experiences are experiences - in the context of this paper: with international expansion events - while executives jointly served on the team. For instance, if two members A and B served 5 and 12 years on the team, respectively, the shared experience of these members are the expansions of their firm during the last 5 years. Earlier work (Bigley and Wiersema, 2002; Westphal and Fredrickson, 2001) showed, for instance, that individual manager's experience in a particular strategic setting may influence subsequent strategic choices; a key notion of our paper is that (sequences of) joint experiences lead to (joint) patterns of sense making and meaning, which in turn influence later strategic decisions – in terms of the degree of innovation and the success of future expansions.

In fact, we suggest this process to be the normal process of learning, where patterns of sense making and meaning develop as individual team members communicate, share their interpretations of individual expansion experiences, and arrive at a common evaluation and assessment of appropriate courses of action. We expect such learning to emerge, *unless* the organization is overwhelmed with non-routine events occurring in close temporal proximity (cf.

Rudolph and Repenning, 2002) or patterns of communication are severely distorted in the teams, for instance, when subgroups exist within the team that hamper the exchange of information between members, break patterns of reflection and analysis (Lau and Murnighan, 1998).

Focusing on learning from expansions in new geographic areas, we developed and tested the argument that team learning enables innovative expansions that are (far) away from the firm´s prior experiences, such as when entering a new cultural block. In this case, communication and debate in order to arrive at a joint interpretation is particularly important -- and it is also where having a team divided into subgroups is particularly detrimental. In the case of novel, dramatic events, team knowledge rather than individual knowledge helps to explore the issue from different angles, using different perspectives and fostering constructive debate (March, Sproull, and Tamuz, 1991). It is where group or team learning differs most from -- and adds most to -- individual learning, perhaps particularly in the case of a diverse team.

Shared experiences of managers may make innovation more likely, but also foster more similar new events in the same novel category. Hence, the pattern is inherently dynamic as we explore expansion events as antecedents and as consequences of TMT characteristics (e.g., changes in composition) and implied processes as firms continue to expand over time in predicted ways.

Two types of implications are explored. First, in terms of strategic behavior, the propensity to enter new cultural blocks and additional countries within the new blocks as a function of prior shared experiences (or, alternatively, experiences of a divided team). Second, in terms of the survival rate of new expansions, where the survival of expansions as a function of experience of team members is seen as a proxy of success.

The hypotheses are tested on longitudinal data on 25 Dutch firms and their TMTs over a period of more than 3 decades (1966-1998). Building on Carroll and Harrison (1998) we develop a new measure of shared experience with foreign expansions of the firm during the joint tenure of team members – enhancing joint communication, evaluation, and sense making. The presence of subgroups was measured by identifying strong faultline settings (Lau and Murnighan, 1998).

5.3 Theoretical Background

Top management teams are traditionally viewed as vital embodiments of firm knowledge and key actors in initiating non-routine strategic moves (Boeker, 1997a; Tushman and Romanelli, 1985). Although an important part of experiential knowledge may be contained at lower levels in the organization, observations on environmental opportunities and threats, as well as causal links between firm's strategies and outcomes are likely to be made and assessed at the level of top management teams (Carpenter and Fredrickson, 2001; Hambrick and Mason, 1984). An important challenge faced by most managers is to make sense of rich, complex, ambiguous and munificent information worlds (Kiesler and Sproull, 1982; Mintzberg, Raisinghani, and Theoret, 1976); administrators that are more developmentally complex have an advantage in recognizing particular strategic events by applying a diversity of descriptions to these events (Weick, 1979). This ability should be demonstrated in such areas as explaining environmental events, evaluating successor failure, interpreting behavior and performance of employees in a culturally diverse organization (Bartunek, Gordon, and Weathersby, 1983). Accordingly, several writers suggested that cognitive complexity of top management teams should match the complexity of organizational structures and environment, particularly in the case of internationalized firms (Bartlett and Ghoshal, 1989; Prahalad and Doz, 1987).

Cognitive complexity is often considered a group phenomenon (Gruenfeld and Hollinghead, 1993; Resnick, 1991). Prior research on group learning emphasizes the ability of groups to integrate the unique individual knowledge of their members into a group-level collective knowledge that is greater than that of any single member (Argote, Gruenfeld, and Naquin, 1999). Indeed, the notion that (under certain conditions) groups of people can retain information through sharing and joint sense-making in a way that transcends the cognitive facilities of individuals is prevalent in psychology and sociology (Klimoski and Mohammed, 1994). Experimental work on small groups (cf. Hinsz, 1990), showed that groups are more sensitive in their memory of information to which they had been (jointly) exposed than individual observers. The superiority of groups over individuals in memory performance is due to drawing on the larger pool of individual memories, correcting recognition errors of individual members, and assessing the reliability of specific items of recovered information (Hartwick, Sheppard, and Davis, 1982; Hinsz, 1990).

In addition to superior ability of groups to accumulate and preserve knowledge (i.e. collective remembering), groups also have greater potential for creating new knowledge, i.e. inferring explanatory generalizations, rules and principles from the available information ("collective induction", cf. Argote *et al.*, 1999; Laughlin and Hollingshead, 1995). At the same time, the ability of a group at collective induction depends on the extent to which the best hypotheses of individual members are accepted by the group – while organizational groups tend to draw on information and ideas shared among team members, at the expense of unique individual inputs ("common knowledge effect", cf. Gruenfield, Mannix, Williams, and Neale, 1996). Indeed, in the absence of psychological safety (cf. Edmondson, 1999, 2002), members may find it psychologically threatening to voice a divergent judgment or criticize the majority preference – and therefore may choose to avoid expressing their ideas altogether (Edmondson, 1999). It is not surprising, therefore, that processes of sharing and creation of knowledge are particularly vulnerable to dysfunctional social concerns in groups composed of members with little common experience -- having little knowledge of other member's expertise, low levels of interpersonal trust, psychological safety, and therefore prone to conformity (Argote *et al.*, 1999; Edmondson, 2002; Gruenfeld *et al.*, 1996).

Accordingly, prior work has investigated the effect of shared tenure on collective knowledge processes. Several laboratory studies noted improvements in knowledge sharing process as group members spend time working together. Experienced teams showed more ability to incorporate the unique information of individual members into their solution and thus showed better performance on cognitive tasks (Gruenfeld *et al.*, 1996; Harrison, Price, and Bell, 1998; Watson, Kumar, and Michaelsen, 1993). Gruenfeld *et al.* (1996) argued that shared tenure serves "as a buffer against the dysfunctional responses to normative influences" (p. 11), leading to improved social processes, providing a forum for exchange of ideas and collective learning.

Other studies, however, found an opposite effect: Katz (1982), for instance, found that active problem solving and information processing drop sharply when tasks become familiar to the group. A part of that mechanism is that, in the absence of novelty, teams may develop norms and routines that guide behavior of members and determine which environmental cues are noticed, and prescribe the response patterns – leading to rigidity and inertia (Gersick and Hackman, 1990; Kiesler and Sproull, 1982). Moreover, with increasing exposure to familiar tasks, groups tend to "chunk" activities into larger units that convey less information than fine-

grained observations - rather than enrich the collective mental maps with new objects and links (Ancona, 1990; Tyre and Orlikowsky, 1994).

It appears that common experience might be either enabling or crippling, depending on whether the team members jointly work on routine or novel tasks. Experiencing novelty, for instance, typically motivates individuals to cease habitual thinking and engage in "mindful" analysis (Langer, 1989; Waller, 1999). Managers in organizations are typically preoccupied with achieving specific goals, rather than reflecting on what they are doing or what is happening in the environment. In addition, they normally do not have time to come together and discuss issues beyond the scope of immediate tasks; even when individual members have concerns over certain strategic issues, it may be hard to capture the attention of the critical mass of people necessary to enact collective learning (Staudenmayer, Tyre, and Perlow, 2002). By interrupting the normal activities, non-routine events (such as technological or administrative innovation) furnish a coordinating function – bringing managers together, "making time" to focus on problems, engage in reflection and analysis (Okhyusen, 2001; Okhyusen and Eisenhardt, 2002; Weick, 1990; Staudenmayer *et al.*, 1996; Zellmer-Bruhn, 2003). This is likely to enact the confrontation of dissimilar perspectives within the group, exposing the basic beliefs and assumptions, leading to transfer and joint construction of knowledge (Argote *et al.*, 1999; Klimosky and Mohammed, 1994; Rogoff, 1991).

Therefore, the purpose of our research is to study how the joint experience with non-routine strategic events (rather than common experience expressed in terms of shared tenure – cf. Bigley and Wiersema, 2002; Westphal and Fredrickson, 2001) influences learning by top management teams of multinational firms. It appears that, for learning to take place, non-routine events need to occur with some frequency over joint tenure of members -- or in a pattern, providing a loose framework or structure that enables learning by individuals and groups (Okhyusen, 2001). Joint tenure provides a basic structure for knowledge creation by enabling the development of joint frames of reference, feeling of psychological safety (Edmondson, 1999; Gruenfeld *et al.*, 1996). Hence, high levels of turnover on the team might impede the development of common language, patterns of communication, familiarity with expertise of other members (Fiol and Huff, 1992; Gersick and Hackman, 1990; March and Simon, 1958). At the same time, too much structure, as reflected in persistent routines, adherence to specific schemas and behavioral scripts – associated with shared tenure in familiar contexts – makes it particularly

unlikely that new knowledge is created (Gersick and Hackman, 1991). When jointly experiencing novelty, members tend to develop more complex, flexible collective knowledge structures (Waller, 1999; Zellmer-Bruhn, 2003). Accordingly , Okhyusen and Eisenhardt (2002), suggested that commonly experienced non-routine events may serve as a source of "semi-structure" for a top management team -- by providing a stimulus for learning without locking the team into a rigid completion path (cf. Brown and Eisenhardt, 1997; Eisenhardt and Sull, 2001; Okhyusen and Waller, 2002).

5.4 Theory and Hypotheses

Market Entry as a Form of Non-Routine Event

We focus on first-time investment in new geographic markets as a form of non-routine event. Expansion into a new national market exposes a firm to an unfamiliar cultural and institutional environment, where home-grown routines and mindsets, as well as knowledge acquired in other foreign markets may not be applicable (Johanson and Vahlne, 1977). New entrants into national markets are subject to liability of foreignness (Zaheer, 1995) and typically have to engage in an extensive learning process (Barkema, Bell, and Pennings, 1996); as a consequence, exposure to new strategic environment leads to acquisition of new knowledge (cf. Johanson and Vahlne, 1977).

Like other sorts of environment-probing activities (cf. Ancona, 1990), entry into new geographic markets may also influence cognitive and social processes at the top management team by interrupting the routine tasks, stimulating the switch from automatic, "mindless" processing to conscious engagement (Langer, 1989), leading to knowledge transfer and collective sense-making (Zellmer-Bruhn, 2003; Klimosky and Mohammed, 1994; Waller, 1999). Such interruptions are likely to furnish the context where collective memory is enriched with new observations, new knowledge is created by inferring generalizations and causal links. Hence, the joint experience of managers in entering new geographic markets may act as a source of semi-structure – a framework preventing the development of rigid routines, enabling individual and organizational learning (Okhyusen, 2001).

For instance, if two members A and B served 5 and 12 years on the team, respectively, the shared experience of these members are the expansions of their firm during the last 5 years. In

fact, the dyadic overlaps can be aggregated at the level of the team, leading to a measure of team overlap in market entry experience (cf. Carroll and Harrison, 1998).

Experience and Strategic Innovation

Entry into a new national market may only be a moderately novel move – particularly if it occurs in the vicinity of current operations (cf. Johanson and Vahlne, 1977). On the other hand, first-time investment in a new "cultural block"– a relatively homogenous cluster of countries with specific cultural and institutional traits (e.g. South East Asia, Latin America, and Latin Europe) – is more novel from strategic perspective. Cultural blocks are in many respects dissimilar from other global cultural areas (Ronen and Shenkar, 1985), therefore, expansions into new cultural blocks represent a considerable departure from the established routines and an important form of strategic innovation in the globalizing economy (Barkema et al, 1996; Delios and Henisz, 2003).

As argued above, joint experience of managers in entering foreign countries may be instrumental in preventing rigidity, acting as a source of flexibility and innovation (cf. Okhyusen, 2001; Okhyusen and Eisenhardt, 2002). Common experience in expanding into new geographic areas, for instance, may lead to accumulation of knowledge about adjacent geographic areas (cf. Johanson and Vahlne, 1977). Also, by stimulating active information processing, join exposure of members to non-routine strategic events may lead to higher alertness to external stimuli and greater flexibility, making strategic innovation more likely (Okhyusen, 2001; Tyre and Orlikowsky, 1994; Waller, 1999; Zellmer-Bruhn, 2003). This leads to the following hypothesis:

H1a. Shared experience of TMT in entering foreign markets increases the likelihood of entering a new cultural block.

Complex collective knowledge structures may facilitate major innovation, but also make more similar new events in the same new category more likely. By jointly experiencing non-routine strategic events, managers develop more complex mental maps, with more categories and more information units per category, and this leads to more efficient information processing and more accurate predictions (Bartunek et al, 1983; Calori *et al.*, 1994; Westphal and Fredrickson 2001: 1118).

Once a new cultural block is entered, a window of opportunity opens for the firm to learn effectively about the new cultural and institutional setting. The first venture in the new cultural block may serve as a gateway into the region -- by providing information on its business environment, signaling opportunities for further expansions. Indeed, market entry is often an outcome of a subsidiary-level initiative, recognized and supported by senior executives (cf. Birkinshaw, 1997; Johanson and Vahlne, 1977). In this sense, developmentally complex, innovative TMTs are more likely to draw on local initiatives, accurately interpret the opportunities signaled by subsidiary managers, and put these initiatives to commercial ends. This is achieved by recognizing and rewarding attractive proposals, allocating investment funds to viable projects.

By picking up signals on local investment opportunities, particularly from subsidiary managers, more cognitively complex TMTs may lead the firm to enter the other national markets in less time, as compared to less complex or rigid teams. Complex collective mental maps also enable executives to identify and endorse more profitable investment. This may lead to greater longevity of ventures initiated by teams experienced in entering foreign markets:

H1b. Shared experience of TMT in entering foreign markets increases the likelihood of entering additional countries in the newly entered cultural block.

H1c. Shared experience of TMT in entering foreign markets increases the longevity of foreign ventures.

The Moderating Effect of Time

Managers are only able to attend and learn from a finite number of non-routine events at any given point in time; simultaneous exposure to a number of non-routine events may impose high and conflicting demands on organizational members (Baron, 1986; Ramanujam, *in press;* Weick, 1990). Too many novel tasks within a certain period of time may actually hurt performance by compromising such time-intensive processes as extensive analysis and (cognitive) conflict resolution. Due to reduced amount of time available for reflection and analysis, organizations typically fail to learn from non-routine events clustered in temporal proximity (Perlow, Okhyusen, and Repenning, 2002). Rudolph and Repenning (2002), for instance, found that, as the number of current non-routine events requiring managerial attention

grows, the task of allocating and controlling attention becomes more complicated, impairing the execution of cognitive processes. Ramanujam (*in press*) found that discontinuous organizational change – characterized by a large number of novel events – leads to organizational errors by adversely affecting attention and memory processes. Similarly, Argote *et al.*(1999) concluded that learning by groups is encouraged through exposure to novelty followed by time to reflect on experience.

Therefore, we expect non-routine events to stimulate organizational learning *unless* such events leave too little time for reflection and analysis. While non-routine events occurring with moderate frequency may furnish a natural pace for collective accumulation and generation of knowledge – acting as a source of semi-structure -- discontinuous bursts of strategic activity might disrupt the collective knowledge processes (cf. Barr, Stimpert, and Huff, 1992; Brown and Eisenhardt, 1997; Ramanujam, *in press*). The same amount of joint experience with non-routine events may be enabling if accumulated over adequate joint tenure, but disruptive if these events occurred in close temporal proximity, in a short period of common tenure. We expect the temporal context (tenure) to moderate the (positive) effect of joint experience of managers in entering new geographic markets on learning by top management teams – diminishing the effect of joint experience on strategic innovation, exploitation of regional knowledge and performance. Formally,

H2a. Shared experience of TMT in entering foreign markets will have weaker (positive) effect on likelihood of entering a new cultural block when team tenure is low.

H2b. Shared experience of the TMT in entering foreign markets will have weaker (positive) effect on entering additional countries in the newly entered cultural block when team tenure is low.

H2c. Shared experience of the TMT in entering foreign markets will have weaker (positive) effect on the longevity of new ventures when team tenure is low.

Faultlines

Social interaction among individuals is fundamental to organizational knowledge creation (Nonaka, 1994). Interpersonal concerns are particularly salient when members engage in evaluative discussion about their team's activities, including evaluation of individual or collective

performance. Indeed, criticism of earlier decisions or "theories in use", while needed to trigger learning, is inherently psychologically threatening (Argyris and Schon, 1978), and so it may be difficult for teams to have high-quality reflective discussion about their shortcomings without the basic interpersonal trust, psychological safety (Edmondson, 2002: 143).

Most management teams are nowadays composed of individuals with diverse professional, educational and social backgrounds (Tsui and Gutek, 1999). Adverse effects of demographic diversity on social processes – driven by mechanisms of self-categorization (Turner, 1982) have long been noted in research on small groups (Levine and Moreland, 1998; Pelled, Eisenhardt, and Xin, 1999). Lau and Murnighan (1998) proposed that, depending on how various demographic attributes align, adverse effects on social processes within the group might range from negligible to very strong. A male employee surrounded by older male co-workers may find the group both attractive – on the basis of self-categorization on gender – and unattractive, on the basis of self -categorization on age (Tsui, Egan, and O'Reilly, 1992). Self-categorization theory would suggest that age and gender represent two separate "psychological groups" that independently contribute to the employee's status in the organization (Westphal and Milton, 2000: 369). When the demographic attributes align – such as in a team composed, for instance, of older males and younger females – tendencies for self-categorization on the basis of demographic attributes and formation of stable subgroups are strongest. Lau and Murnighan (1998) refer to this situation as "strong faultlines"; they argue that strong faultlines are particularly damaging for cohesion and interpersonal trust, and, as a consequence, learning and innovation. When "faultlines" – hypothetical dividing lines that may split the group into subgroups on the basis of one or more observable attributes – are present on the team, they are likely to accentuate the intragroup differences, activating the stereotypes and inhibiting exchange of knowledge. By undermining psychological safety and inhibiting knowledge flows, strong faultlines on the team are also likely to inhibit team learning from experience (Edmondson, 1999, 2002).

Earlier we argued that joint experience in entering new countries may serve as semi-structures, allowing top management teams of internationalizing firms to avoid rigidity and develop rich knowledge structures -- leading to greater strategic novelty, coherence, and, eventually performance. We now hypothesize that presence of strong faultiness is likely to thwart these effects. Formally,

H3a. Strong faultine settings will diminish the (positive) effect of shared experience of TMT in entering foreign markets on the likelihood of entering a new cultural block.

H3b. Strong faultine settings will diminish the (positive) effect of shared experience of TMT in entering foreign markets on the likelihood of entering additional countries in the newly entered cultural block.

H3c. Strong faultine settings will diminish the (positive) effect of shared experience of TMT in entering foreign markets on the longevity of new ventures.

5.5 Methods

Sample

We tested our hypotheses on a sample of twenty-five large non-financial Dutch firms from a variety of industries. These were the largest firms on the Amsterdam Stock Exchange, except for four firms (Akzo Nobel, Philips, Royal Dutch Shell, Unilever) which are a league on their own in terms of size, breadth of activities, as well as international experience. The firms in our sample typically had little foreign experience prior to 1966 but have been actively expanding abroad since then. By the end of our window of analysis (1966-1998), they had invested in 93 countries (in nine cultural blocks, cf. Ronen and Shenkar, 1985). Their average number of employees was 13,907 (median: 10,327) and their average sales were $ 2,566 million in 1993 (median: $ 1,898 million). Data were obtained from the firms' annual reports from 1966-1998.

These annual reports also contain data on the TMTs of firms. An attractive feature of the Dutch setting is that firms have clearly defined TMTs (called "Raad van Bestuur"). These teams represent all main functions (marketing, finance and accounting, production, etc.) and are the main governing body of the firm for strategic decisions. Data on tenure, educational type (engineer, lawyer, etc.) and age of TMT members were also obtained from annual reports. This led to a sample of 133 first-time investments in new cultural blocks and 327 entries in new countries (in familiar cultural blocks).

Analysis

Consistent with our hypotheses, we used event history analysis to study the incidence of entry into a new cultural block, subsequent entry in other countries within the same block, and

longevity of ventures. Event history is a conventional tool in studying the incidence of events -- such as strategic action or divestment of a venture -- in management research (cf. Boeker, 1997a; Delios and Henisz, 2003). This technique is particularly convenient when data contain so-called censored observations, i.e. the event of interest does not occur within the window of analysis (risk set).

To study the likelihood of entry into a new cultural block, we organized our data in firm-block-year spells (i.e. one record for each possible block-year combination for each firm). For each record, the dependent variable ("EVENT") takes the value of 1 if the cultural block is entered in the current year, and 0 otherwise. Since we were only interested in the first investment event, all records subsequent to block entry were erased (cf. Delios and Henisz, 2003), yeilding 2983 firm-block-year combinations that included 133 block entry events. Hazard rate formulation used in our models corresponds to the likelihood of a cultural block being entered by a particular firm in a given year. Variables of interest were entered as time-variant covariates, which allowed us to study the immediate effect of team attributes on the likelihood of block entry (Allison, 1995).

We used a similar method to test hypotheses on (further) country entries in the newly entered block. Data were organized in firm-country-year spells; further, consistent with our theory, countries were set to come at risk of being entered (i.e. by a focal firm) at the time when the first expansion in the cultural block occurs (this was achieved by deleting all records pre-dating the block entry and subsequent to country entry). This procedure resulted in 57,231 useable firm-country-year records, including 327 country entry events. The hazard rate formulation of the model reflects the likelihood of country entry, given that the focal firm has already entered the cultural block. Indeed, time-variant specification of TMT variables was used to analyse the immediate effects.

We also applied the event history methodology to study longevity of foreign ventures. We organized the data in venture-year format (omitting all observations post-dating the divestment of the subsidiary). Data on 1,317 foreign ventures produced 12,271 records, of which 329 correspond to failure events. We used time-invariant specification of explanatory variables – to study the effect of team composition at the moment of venture initiation on its subsequent longevity.

Several methods to parametrize the time-dependence of hazard rate in event history models are available (Allison, 1995). We chose to use Wiebull parametric regression specification for all dependent variables (and corresponding data formats) – since, as indicated by likelihood ratio tests (StataCorp, 2000), it appeared to fit our data better than other (parametric) specifications:

$$h(t) = pe^{x_j\beta}t^{p-1}$$

where p is the shape parameter to be estimated .

As a part of sensitivity analysis, we also re-estimated our models with different distributional assumptions (gamma, loglinear, etc.), and using the semi-parametric Cox regression; this led to a similar pattern of results.

Variables

Shared experience in entering new countries. We based our measure of joint experience in entering foreign markets (ELAP) on the measure of tenure overlap (TLAP) offered by Carroll and Harrison (1998). For instance, if two members A and B served 5 and 12 years on the team, respectively, the shared experience of these members are the expansions of their firm during the last 5 years. For each firm and year, we calculated the number of expansions that occurred during the joint tenure of every pair of team members, and than averaged this number across all possible pairs on the team:

$$ELAP = 1/N\sum_{i\neq j} E_{ij}$$

Where E_{ij} is the number of expansion events that occurred during the joint tenure u_{ij}, u_{ij} = $\min(u_i,u_j)$, of individuals i and j. N is the total number of pair-wise comparisons. For distributional reasons (there was a number of outliers in the sample), we used the logarithmic transformation of this variable.

Average tenure. TMT tenure is the number of years of membership of the TMT. We use the mean of members' tenure with the team as a measure of temporal context, time over which joint experience was accumulated.

Faultline strength. The operationalization of faultlines was based on Lau and Murnighan (1998). The most likely demographic attributes favoring subdivisions within teams are those which are "impermeable" (Pelled et al., 1999), i.e., where individuals cannot move in or out at will.

Examples are gender, race, nationality, age, tenure, and education (type and level). Although age and tenure increase with time, individuals do not have the choice of going back to lower levels of tenure or age, which makes these categories highly impermeable as well (Pelled et al., 1999). Given the almost perfect homogeneity of our sample in terms of gender, race, and nationality, our measure of faultlines was based on the age, tenure, and education (type and level) of team members. Data on the age of TMT members were obtained from annual reports, "Who is Who," by phoning and faxing companies, and from other sources. The level of education was operationalized (since the Dutch system of higher education does not allow a classification in terms of BA, MBA, and so on, cf. Boeker, 1997a; Wiersema and Bantel, 1992) using a three-level categorical variable with value = 0 for no university degree, 1 = for a university degree, and 2 = for doctorates.[5]

In the first step, the strongest intra-team split (i.e., the most likely faultline) was identified using iterative k-means cluster analysis. (We used ClustanGraphics 5.25, which allows continuous and nominal attributes to be combined in calculating distances between subjects.) After potential subgroups were identified, we used the associated measure to compare the total (multivariate) variance of the team with the variance within subgroups. High values of this measure (i.e., high total-to-within ratios) indicated better-separated subgroups and stronger faultlines, while lower values indicated weaker faultlines.

Control variables

TMT Size was measured by the number of members of the TMT (including the Chair). These data, as well as data on other control variables, were also available from annual reports. We used the logarithmic transformation of the original variable.

Firm Size. Entry decisions may be influenced by the size of the firm, since bigger firms are more likely to have the resources and expertise to successfully enter foreign markets. Hence, we controlled for firm size as measured using the logarithm of the number of employees.

Firm profitability and the implied financial slack may also influence entry decisions: cash-strapped firms may be less likely to accept the risks of entering foreign, and especially, unfamiliar markets. We included return on assets in our models to control for these effects.

International experience of the firm. We also controlled for the firm's international experience, measured by the number of prior foreign expansions. International experience may lead to top

managers having richer and more accurate cognitive maps of foreign conditions (Calori et al., 1994), which may reduce the novelty of foreign entries for managers of fully-fledged multinational corporations as compared to managers of less internationalized firms (Johanson and Vahlne, 1977; Barkema and Vermeulen, 1998). We also included the square term of this variable to capture possible non-linear effects.

For similar reasons, we controlled for **experience in the cultural block** and **experience in the country** when analyzing longevity of ventures.

Cultural distance. We used the Kogut and Singh (1988) operationalization of cultural distance (i.e. from the Netherlands) – based on the four dimensions developed by Hofstede to control for country-specific cultural barriers.

Country risk. We used the measure of economic hazards developed by Anderson and Gatignon (1986) and updated by Barkema and Vermeulen (1998). Countries are categorized into three groups (lowrisk, medrisk, highrisk) on the basis of economic, cultural, and political data.

Market size was measured by Gross Domestic Product of the country – as reported in the UN publications.

Economic development. We used the GDP per capita ratio to control for economic wealth of foreign countries.

Restrictions on foreign investment. Legal restrictions on foreign investment are likely to affect the attractiveness of the country to foreign investors. To control for these effects, we classified all countries into three groups (the procedure was repeated for each year within the window of analysis). If no restrictions on foreign investment were mentioned in the UN World Investment Reports, the country was assigned to the first category, "No Restrictions". Countries that impose certain restrictions on foreign investment (for instance, introducing caps on foreign participation in national companies or restricting repatriation of profits) formed the second group – "Mild restrictions". Countries that explicitly forbid foreign investment – indeed, as indicated by the UN World Investment Report – were assigned to the third category, "Severe Restrictions".

Table 1: Descriptive Statistics and Correlations

	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Firm international experience	24.338	24.922	1								
2. Log experience in the block	0.44	2.723	0.5	1							
3. Log experience in the country	-1.321	2.945	0.391	0.653	1						
4. Log employees	9.014	0.843	0.316	0.199	0.129	1					
5. ROA	0.059	0.069	0.304	0.174	0.12	-0.02	1				
6. Log GDP	12.468	2.166	0.356	0.421	0.575	0.101	0.167	1			
7. Log GDP per capita	8.739	1.3	0.381	0.463	0.531	0.106	0.149	0.735	1		
8. Cultural distance	2.617	1.122	-0.013	-0.269	-0.246	-0.028	-0.024	-0.396	-0.417	1	
9. Mild restrictions on FDI	0.071	0.257	0.024	-0.156	-0.211	0.073	-0.002	-0.188	-0.426	0.379	1
10. Severe restrictions on FDI	0.002	0.042	-0.008	-0.047	-0.026	-0.031	-0.011	-0.004	-0.06	0.051	-0.006
11. Medium risk	0.16	0.366	-0.039	-0.201	-0.326	-0.018	-0.076	-0.415	-0.418	0.429	0.312
12. High risk	0.076	0.264	-0.023	-0.144	-0.221	0.054	-0.015	-0.401	-0.573	0.241	0.289
13. Acquisition	0.646	0.478	0.131	0.212	0.29	0.039	0.148	0.227	0.264	-0.237	-0.176
14. Wholly owned	0.667	0.471	0.104	0.147	0.212	-0.126	0.067	0.262	0.312	-0.184	-0.192
15. Unrelated	0.108	0.31	0.028	0.028	0.077	0.026	-0.029	0.127	0.134	-0.109	-0.076
16. Log team size	1.473	0.408	0.161	0.093	0.101	0.25	0.07	0.078	0.033	-0.025	0.063
17. Log average tenure	0.008	0.717	-0.084	0.079	0.017	0.116	-0.07	0.003	0.017	0.035	0.023
18. Log faultline strength	-0.005	0.378	-0.147	-0.141	-0.07	0.065	-0.071	-0.035	-0.087	-0.024	-0.001
19. Log experience overlap	-0.016	2.272	0.202	0.105	0.022	0.257	-0.035	-0.098	-0.059	0.113	0.064

Wholly owned subsidiary. As joint ownership typically diminishes longevity of the venture (cf. Barkema and al, 1996), we also controlled for ownership structure when studying the performance of expansions. The variable takes the value of 1 if the focal firm assumes full ownership of the venture (i.e. 100% stake).

Acquisition. This dummy variable indicates that the venture is an acquisition (i.e. rather than a greenfield start-up). Like ownership structure, entry mode typically affects longevity of ventures (cf. Hennart and Park, 1993).

Unrelated. Since unrelated expansions (in product terms) are usually more challenging than related ventures, we controlled for the relatedness of expansion. If the new venture does not belong to the same 3-digit BIK code (Dutch industry classification is very similar to SIC) as any other business of the firm, it is considered unrelated.

Finally, we included **cultural block dummies** and **firm dummies** in all our models to control for respective effects. We used included **time dummies** in all formats except for longevity, where it was impossible for numeric reasons. In the latter case, we included the **linear trend of time** and it second and third powers (which jointly can accommodate virtually any pattern of time effects).

5.6 Results

The estimation results are presented in Table 2. The dependent variable captured the event of interest – entry into a new cultural block, entry into additional countries within the new cultural block, and failure of a venture, respectively. Our models follow the hazard rate specification where slope coefficients take values only in the positive range; values between zero and one indicate negative effect on incidence of the event (similar to negative coefficients in linear regression), values above one imply positive effect. All models are represented in the hazard rate formulation, which, in the case of the survival analysis, is the reverse of longevity.

Our first set of hypotheses predicted positive effects of shared experience on entry into new cultural blocks, entry into new countries within the same block, and positive effect on

Table 2: Slope Coefficients for Wiebull regression – Log Relative-Hazard Form

Variable[2]	Entry into new cultural blocks[3][4]	Entry into additional countries within the new block	Hazard of foreign ventures (reverse of longevity)
Firm international experience	(-) 0.944*	(-) 0.98†	1.09***
" squared	1.001*	1*	(-) 0.999***
Log experience in the block			1.053
Log experience in the country			(-) 0.963
Log employees	3.287**	1.491*	(-) 0.686
ROA	(-) 0	2.905	2.879
Log GDP		1.566***	(-) 0.982
Log GDP per capita		(-) 0.974	1.113
Cultural distance		(-) 0.876*	(-) 0.934
Mild restrictions on FDI		(-) 0.792	
Severe restrictions on FDI		(-) 0.094**	
Medium risk		(-) 0.898	(-) 0.658
High risk		(-) 0.34**	(-) 0.969
Acquisition			(-) 0.892
Wholly owned			(-) 0.708*
Unrelated			1.527*
Log team size	1.184	1.122	(-) 0.671
Log average tenure	1.371†	1.022	(-) 0.877
Log faultline strength	(-) 0.834	1.011	1.334*
Log experience overlap	1.001	(-) 0.945	1.079†
Log experience overlap * log average tenure	(-) 0.868	(-) 0.952	(-) 0.871*
Log experience overlap * log faultline strength	(-) 0.974	1.002	(-) 0.955
N	2983	57231	12271
Log likelihood	-113.717	-811.98	-717.19
Wald χ^2 (df)	35562.27*** (77)	3944.58*** (82)	427.96*** (60)

[2] Block dummies, firm dummies, year dummies or trend of time and its power terms not shown.
[3] **$p<0.01$; *$p<0.05$; † $p<0.10$ (one-tailed if hypothesized, two-tailed if not).
[4] In hazard rate models, interpretation of slope coefficients is different than, for instance, in linear regression. Values between 0 and 1 imply negative effect, as indicated in brackets; values above 1 imply positive effect.

longevity of foreign ventures. We do not find support for these hypotheses; in the first two models, slope coefficients are not statistically significant. As all continuous variables involved in the interactions were centered (cf. Aiken and West, 1991), absence of significant linear effect implies that, on average, shared experience in entering foreign markets does not bear significant effect on entering new cultural blocks and additional countries within the new blocks. Contrary to our hypothesis, we found a marginally significant ($p<0.1$) negative effect of common experience on longevity of foreign ventures (i.e. positive for hazard).

We found strong support for hypothesis 2c, about the moderating role of tenure. The product of average tenure and share of new members has the predicted positive effect on the longevity of foreign ventures ($p<0.05$). Combined with the negative main effect of shared experience, these results suggest that experience in entering foreign markets positively affects longevity of ventures *only* in teams with relatively high levels of tenure; in short-tenured teams this effect may even become negative. This is an interesting outcome, strongly supportive of the notion that, to learn from novelty, teams need time for reflection and analysis. We found no support for H2a and H2b. In addition, average tenure (log) had positive effect on entry into new cultural blocks ($p<0.10$).

Hypotheses 3c was not supported directly: the product term of faultline strength and experience was insignificant in all three models. At the same time, faultline strength (log) showed a direct negative effect on the longevity of ventures ($p<0.05$).

5.7 Discussion

There is a lot of literature on the foreign investments of firms, cultural barriers and learning from international experience (Barkema et al., 1996; Johanson and Vahlne, 1977). However, internationalization has often been considered as a mechanistic process, and the role of top management has largely been ignored. Our paper proposed and theoretically developed the idea that the decision to invest in novel domains implies breaking the mold in terms of going beyond the established routines, mindsets and structures. Hence, a firm's top management is important for this decision (Gersick, 1994; Romanelli and Tushman, 1994). Based on these key notions, we developed theory and hypotheses on how the joint experience of managers in entering new markets may lead to innovative foreign investments, coherent geographic strategies, and

performance of foreign ventures. Event history models and data on foreign expansions by 25 firms yielded moderate support for these predictions.

Our paper adds to previous studies on top management characteristics and strategic change and innovation. Previous research has explored a firm's propensity to adopt innovations (Wiersema and Bantel, 1992), to enter a new industry (Boeker, 1997a) and to initiate and implement a strategic reorientation (Gersick, 1994; Romanelli and Tushman, 1994). Our study extends this research to the domain of foreign investments and builds further links to organizational performance.

The most interesting outcome of our study concerns the joint effect of common experience with entering foreign markets and (average) team tenure. While we expected the former to influence longevity of foreign ventures independently (i.e. "main" effect), we only found this effect in teams with (relatively) high levels of average tenure. Apparently, time is crucial for learning from novelty, this is consistent with findings presented by Barr *et al.*, (1992), Rudolph and Repenning (2002); Perlow *et al.* (2002), etc. Discontinuous change, bursts of strategic activity may actually be damaging for organizational learning (Ramanujam, *in press*). Non-routine events need to be followed by time that allows the team to reflect on experience, engage in collective sense-making. A combination of rich common experience and tenure seems seem to act as a source of semi-structure, providing the most favorable setting for learning by individuals and organizations.

Another important result concerns the role of subgroups on the top management team. Indeed, formation of subgroups along the demographic faultlines is likely to hamper the knowledge processes on the team, affecting the quality of decision-making. We found strong empirical support for the ideas offered by Lau and Murnighan (1998). In fact, rather than diminishing the effect of experience, faultlines had direct negative effect on longevity of ventures. This finding may also have important practical implications – in terms of selecting new members for top management teams, but also assigning employees to workgroups, product development teams, etc.

Future research could add to our study in various ways. First, the causal mechanisms that lead to successful foreign ventures in the case of tenured teams with considerable joint experience might represent an interesting topic for future work – since, in our study, team characteristics affected only the performance of ventures, and not the other organizational outcomes in our

study. Second, future research could look at different factors potentially influencing the development of collective knowledge structures – such as technological change, product development, environmental turbulence (cf. Calori et al, 1994). Third, future work might use the direct measures of managerial cognition (cf. Barr et al., 1992); studies with such improved measures would add to our work as well.

Chapter 6

Conclusions

6.1 Major Outcomes

When work on this thesis started, it was obvious that the field of TMT research was undergoing a period of major transformation. Earlier focus on cognitive implications of demography (diversity, in particular), was being challenged by group dynamics researchers, who emphasized the implications of demography for social processes (Pelled et al, 1999). Combined, these two theoretical lenses served to provide a much richer framework for understanding the mechanisms triggered (or reflected in) demographic attributes. At the same time, cognitive theory experienced renewed interest among organizational psychologists and was making inroads into the research on individual and organizational learning (Calori et al, 1994; Walsh, 1995), enriching the theory in this domain as well. This thesis seeks to be a part of the process of theoretical integration of what used to be separate schools of thought and empirical programs – a process also apparent in other domains of management research.

The finding that the degree of international diversification of the firm affects (several aspects of) the composition of its top management team (Chapter 3) lends strong support to the idea that the scope of international involvement of a firm is a meaningful, practically significant dimension, that also imposes additional demands on cognitive complexity of managers. This also means that multinational firms represent an appropriate setting for empirical studies of TMT composition, its consequences for various organizational outcomes (cf. Hambrick et al, 1996).
Results obtained in another empirical study (Chapter 4) are encouraging as well. Using the (relative) novelty of investment decisions as a dependent variable, this study makes an attempt to integrate the social and cognitive perspectives on demographic diversity, and also considers the effect of joint tenure. The core ideas of the theoretical model were supported: while executive diversity per se may be positive for strategic novelty, formation of subgroups along demographic "faultlines" appears to be disruptive for innovation. Both effects tend to diminish over time, as managers continue working together.

Yet another attempt at integrating distinct theoretical approaches is undertaken in the third study (Chapter 5). In this case, the attempt is made to inject the organizational learning theory with insights from research on managerial cognition, building on the work of Brown and Eisenhardt (1997), Bigley and Wiersema (2002), Okhyusen and Eisenhardt (2002), among others. Going beyond tenure as a proxy for experience, the study develops an argument that by jointly

experiencing non-routine strategic events, such as entry into a new geographic market, executives enrich their collective knowledge structures with new objects and links, leading to higher levels of flexibility, innovation, and higher organizational performance. Learning from joint experiences, however, can be hampered by overwhelming number of novel events, or by formation of demographic subgroups on the team. The results of this study suggest that TMTs benefit from joint experience only when the novel events are followed by time for reflection and (joint) analysis. This outcome is, in fact, in line with recent research on organizational errors and change (cf. Perlow et al., 2002).

6.2 Limitations

Obviously, the research presented in this thesis has limitations as well. Dutch TMTs – like TMTs in most or all other European countries and perhaps most other countries in the world – showed little diversity in nationality, gender, and race. Therefore, only a subset of potentially relevant demographic attributes was explored, which may be particularly constraining, for instance, for operationalization of faultlines. Indeed, other sources of diversity – such as international experience – may also be important for the making of strategic international decisions (Sambharya, 1996). In many respects, direct measures of cognitions and social processes are superior to observable proxies (Lawrence, 1997). Although the use of questionnaire measures precludes longitudinal design, a combination of survey research and longitudinal studies would make for a more comprehensive empirical strategy.

The scope of organizational outcomes in the present studies is partial as well: for instance, an expansion can be routine in the geographic sense, but novel in technological sense (and vice versa). Therefore, accounting for multiple strategic attributes of organizational expansion would lead to more accurate and insightful analysis. Despite the globalization trends (cf. Hitt et al, 1998), firms originating from other institutional and cultural environments may differ in terms of their strategic behavior from Dutch firms, originating from a relatively small, open economy. While other, for instance, European companies, may follow similar patterns, firms from countries with large domestic markets, less dependent on international business (cf. Delios and Henisz, 2003), may differ considerably from the Dutch firms. Future research might shed light on relative

importance of these differences, and, therefore, the generalizability of results obtained on the Dutch sample.

Appendix A to Chapter 4

Measuring Faultline Settings

Lau and Murnighan (1988) used conventional measures of diversity for ratio-scale variables and qualitative judgment to assess whether in their examples in which all teams had four members only: 1) faultlines existed, and 2) whether the faultlines were weak or strong. However, they emphasized that a composite quantitative measure, including both ratio-scale and nominal-scale demographic characteristics, would be desirable (1998: 327).

Interestingly, such quantitative methods have recently been developed. Hence, for the *first* step mentioned above, following Lau and Murnighan's recommendation – since team characteristics include both continuous (tenure, age) and categorical (amount and type of education) variables – we used a mixture-model or latent class technique, specifically developed for categorical and mixed-type data (Dillon and Kumar, 1994). This technique can handle indicators of different scale types (Everitt, 1993). It was particularly important for our study to use an objective method for the first step, since many TMTs had more than four members (unlike the examples in Lau and Murnighan, 1998) and a qualitative assessment of the existence of faultlines would have been difficult. We used the latent class clustering procedure, LatentGOLD (Statistical Innovations Inc.), to evaluate for each separate team-year whether a division into separate clusters or subgroups fitted the data best or not, thus avoiding qualitative judgment in the first step. Using this procedure, we identified clusters in 34 % of the team-years.

For the *second* step, we exactly applied Lau and Murnighan's 1998 classification to distinguish between weak and strong faultline settings. We identified the number of possible ways to subdivide a team along the four available demographic attributes ("ways"). The minimum number was 1 if only one demographic attribute suggested group subdivision. If two attributes suggested the same pattern of subdivision, this implied one way as well, and so on. The maximum number of different ways was 4 (i.e., the number of attributes in our analysis). Next, we counted the number of attributes that aligned ("align") producing the same subdivision: this value ranged from 1 (when every "active" attribute suggested a

different pattern of subgroup formation) to 4 (all attributes aligned, i.e., implying the same subgroup). Finally, we used Lau and Murnighan's classification of the strength of faultlines based on the number of ways of group division and their alignment: ("align-ways"): 1-1 = strong; 1-2, 1-3, 1-4 = weak; 2-1 = strong; 2-2 = weak. (3-1 and 4-1, which would have indicated very strong faultlines, were not present in our sample). Our theory and hypotheses concerned the implications of strong faultline settings; they did not imply a prediction for the effect of weak faultlines (for instance, zero or negative); the effect was an empirical matter. Therefore, in addition to a dummy to capture strong faultline settings, our regression analyses contained a separate dummy to capture – and control for – weak faultline settings.

Samenvatting
(Summary in Dutch)

Met het oog op de toenemende invloed van globalisering en technologische vooruitgang op het concurrentieel voordeel van ondernemingen, is het van groot belang inzicht te verkrijgen in het soort leiderschap dat effectief met deze uitdagingen kan omgaan. Hoewel er reeds geruime aandacht is besteed aan de rol van top management team (TMT) karakteristieken in technologische innovatie, ontbreekt het de literatuur aan diepgaand inzicht in de vereiste TMT karakteristieken voor succesvolle "internationale innovatie." Het onderzoek in het voorliggende proefschrift wil derhalve met name op dit terrein een bijdrage leveren door de antecedenten en consequenties van TMT compositie te bestuderen in de context van internationale expansie. Hoofdstuk 2 geeft allereerst een overzicht van bestaand onderzoek op het gebied van TMT compositie, alsmede van studies op drie specifieke terreinen – *managerial and organizational cognition, self-categorization and conflict in small groups,* en *socialization* – die contribueren aan de theoretische modellen in dit proefschrift. De drie empirische studies die volgen, pogen, naast hun individuele contributies, tevens een gezamenlijke bijdrage te leveren aan het huidige integratieproces in de TMT literatuur van theoretische en empirische stromingen die voorheen duidelijk gescheiden waren.

De eerste empirische studie (Hoofdstuk 3), gebruik makende van *upper echelons theory,* onderzoek naar internationaliserende ondernemingen, en *structural holes theory,* bestudeert de relatie tussen (de mate van) internationalisatie van de onderneming en demografische karakteristieken van haar TMT. Het richt zich, meer in het bijzonder, op de vraag of en hoe een toename in de mate van internationalisatie additionele cognitieve vereisten stelt aan TMTs en haar individuele leden. De empirische resultaten van het onderzoek tonen aan dat relatief vergevorderde stadia van internationalisatie inderdaad relatief hoge eisen stellen aan de cognitieve complexiteit van managers. Internationaal gediversificeerde ondernemingen hebben "entrepreneurial" executives nodig die resource- en kennisstromen tussen (groepen van) mensen binnen de onderneming kunnen bevorderen. Tevens vereisen dergelijke ondernemingen CEOs en TMTs met goed ontwikkelde sociale netwerken en ruime information-processing capacities, gemeten aan de hand van CEO en TMT tenure en de heterogeniteit en grootte van het TMT.

Na het verkrijgen van de zojuist besproken globale inzichten in de vraag wat voor soort TMTs vereist zijn voor internationaal gediversificeerde ondernemingen in Hoofdstuk 3, gaat Hoofdstuk 4 dieper in op de rol van TMT diversiteit. Deze studie integreert bestaande sociale en cognitieve theoretische benaderingen met betrekking tot demografische diversiteit en richt zich met name op het idee dat demografische diversiteit in bepaalde gevallen kan leiden tot de vorming van subgroepen binnen het TMT die de gebruikelijke sociale processen in de weg kunnen staan en dusdanig een afremmende werking kunnen hebben op het verkrijgen van "strategic novelty" via expansie in nieuwe geografische gebieden. Het kernidee wordt ondersteund door empirisch bewijs: hoewel TMT diversiteit op zichzelf inderdaad een positief effect zou kunnen hebben op strategic novelty, hebben "faultlines" – welke het TMT verdelen in subgroepen van top managers op basis van één of meer demografische karakteristieken – een negatief effect op internationale innovatie. Beide effecten zwakken echter af naarmate de tijd verstrijkt en managers samen blijven werken. Tevens worden hypotheses bevestigd omtrent het idee dat socialization van TMT leden (gemeten aan de hand van joint tenure) invloed heeft op de relatie tussen (demografische) diversiteit en besluitvorming, alsmede de negatieve effecten van faultlines vermindert.

Hoewel de twee voorgaande empirische studies ook gebaseerd zijn op organizational learning theory, speelt deze theorie – specifiek in de vorm van het leren van ervaring met expansie in nieuwe nationale markten – een expliciete en belangrijkere rol in de laatste empirische studie (Hoofdstuk 5). Eerder onderzoek heeft vaak de strategische consequenties bestudeerd van individuele karakteristieken van TMTs door middel van diversiteitsmaatstaven met betrekking tot, bijvoorbeeld, tenure. In plaats daarvan richt de huidige studie zich echter op *gezamenlijke* ervaring van TMT leden tijdens hun tenure. Het kernargument van dit onderzoek is dat "non-routine strategic events" (hier: het expanderen in buitenlandse markten) het leerproces op groeps- en organisatieniveau bevorderen – tenzij deze gebeurtenissen de organisatie overweldigen of sociale processen binnen het TMT ernstig vervormen (in faultline settings). Het argument wordt ook hier gestaafd met empirisch bewijs: door samen ervaring op te doen met non-routine strategic events, verrijken top managers hun "collective knowledge structures," hetgeen leidt tot meer flexibiliteit, innovatie, en betere performance van de organisatie. Echter, een teveel aan nieuwe gebeurtenissen of vorming van subgroepen binnen het TMT kunnen, zoals verwacht, het leerproces van gezamenlijke ervaring blokkeren. De resultaten suggereren dat

TMTs alleen dan van gezamenlijke ervaring kunnen profiteren als de nieuwe gebeurtenissen worden gevolgd door voldoende tijd voor reflectie en analyse.

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The most important trends for firms during the last decade, in terms of what drives their competitive advantage, are globalization and technological innovation. It is important, both from a theoretical and a practical perspective, to understand what sort of leadership is needed to anticipate and manage these challenges. A variety of studies have explored how top management team characteristics (TMT) drive technological innovation. However, only a few studies have explored how the observable characteristics of TMTs influence international innovation; these studies are very partial and provide mixed results. Research presented in this thesis explores the precursors and consequences of TMT composition in the context of international expansion.

ISBN: 90 5668 133 8

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CentER Dissertation Series